Still Alive With Sir Clive!

ZXir QLive Alive!

The Timex/Sinclair NorthAmerican User Groups Newsletter

Volume 7 No. 4 Winter '97

Chairman Donald S. Lambert Auburn, IN

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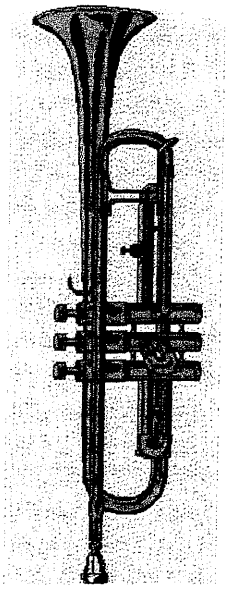
IT IS THAT TIME AGAIN

Your Membership is Due



T/SNUG Information

We wish to support the following platforms : ZX-80/81, TS-1000, Spectrum, TS-2068, Z88 and QL. If you have any questions about any of these fine Sinclairs, contact the:

Chairman

Chief Motivator
Donald S. Lambert (ISTUG)

Vice-Chairmen

Tape & JLO PD Library
D. G. Smith
415 Stone St.
Johnstown, PA 15906
814 535-6998

Z88 Library
Dave Bennett (HATSUG)
1275 Timber View Dr.
Mechanicsburg, PA 17055-9146
717 732-4374

RMG Enterprises
Rod Gowen (CCATS)
14784 S. Quail Grove Cir.
Oregon City, OR 97045
503 655-7484 FAX 503 655-4116

TS-2068
Rod Humphreys (VSUG)
10984 Collins Pl.
Delta, BC V4C 7E6 Canada
604 583-2819

QL PD Library
John Donaldson (CATUG)
835 Foxwood Cir.
Geneva, IL 60134-1631
630 232-6147

AERCO & Z80 Emulator
Keith Watson
41634 Amberly Dr.
Mt. Clemens, MI 48038

BBS ---==GATOR==---
Bob Swoger (CATUG)
613 Parkside Cir.
Streamwood, IL 60107-1647
630 837-7957 Work 847 576-8068

Any of the above can also be reached by E-Mail through the **Club BBS 847 632-5558**

ZXir QLive ALive!

Is the newsletter of T/SNUG, the Timex/Sinclair North American User Groups, providing news and software support to the T/S community in a **VOLUME** of four newsletters per year; beginning with the Spring (March) issue.

T/SNUG's main goal is to preserve and encourage the use of Sinclair computers by providing an open forum for the exchange of knowledge, building and maintaining of software libraries. Providing vendors, repair service and members with free ad space.

It is the user groups and individual subscribers, rather than the vendors, that provide the pecuniary support for this newsletter. Vendors and developers receive this newsletter free of charge, though contribution from vendors and user groups is gratefully accepted. Please support our vendors and service providers whenever possible.

If you have a problem or you have solved a problem, please share it with the rest of us. No problem will be considered unimportant.

Editor/Treasurer/Publisher
LarKen PD Library

You can keep T/SNUG alive by an annual contribution of $12 for one VOLUME made payable to Abed Kahale. Send check to:-

ABED KAHALE
3343 S FLAT ROCK CT
SIERRA VISTA AZ 85635-6874
520 378-3424

Back copies are available for $1.00 each postpaid.

Treasury Notes

As of December 10, 1997, we have a balance of $682.87

Article Contributions

Send in your articles by tape or disk and your inputs to:—
DONALD S LAMBERT
1301 KIBLINGER PL
AUBURN IN 46706-3010
Phone 219 925-1372
By hardcopy, MSDOS or modem (.3-33.6) to:
Abed Kahale
E-mail: AKahale@compuserve.com

GATOR's TWISTED PAIR

To better inform the Sinclair Community, four 24-hour a day BBSs are now provided to serve you. You are encouraged to exchange mail and use the files sections of these boards. Bulletins and ads are available to all.

Q-Box BBS 810 254-9878
Utica, Michigan
SCC Sever Jose Moreno
http://members.tripod.com/~helpme/
SOL BBS 520 882-0388
Tucson, Arizona
Club BBS 847 632-5558
Arlington Heights, Illinois

If you know the Internet E-Mail address of a Sinclair user, but do not have access to Internet, simply address your E-Mail to GATOR Sinclair on the 24-hour **Club BBS** and include the name and E-Mail address of the user you wish to reach. Then check the Club BBS from time to time if you expect a reply.

We encourage you to exchange mail and contribute to the UPLOAD section. Call and ***register*** using your first, last name and phone number along with a password you won't forget. ***Write It Down!*** Do not try to do anything else at this time.

When you call-in the next time, you will have Level 5 security and be able to enjoy full user privileges. The BBS has smaller sections called conferences. Select "J " for "Join a Conference". Select "TIMEX" to get into the Sinclair Section. The mail you then read will only be from other T/S users. Use extension .ART for articles, .ADS for ads and .NWS for news when UPLOADing.

For help, contact the SYSOP, Bob Swoger, by leaving a message, mail, E-Mail or phone.
Bob_ Swoger-CENG108@email.mot.com

The RMG Project

Rod Gowen has made it known to T/SNUG that he has to move and clean out his stock of Sinclair Items. Wanting not to see these items in a land-fill, he has generously offered to pack up and send the items anywhere for a modest price. To date, no one has come forward. When Sinclair owners were poled the biggest factor seemed to be that no one had the room for storage.

Members of T/SNUG have come up with a plan to collect contributions for a project to fulfill Rods monetary request. Rod could then ship his Sinclair stock to a storage space in Boxholm, Iowa provided by Jay Shepard. Contributions to the project would have no string attached, that is, contributors would not expect any of the items on the list in return for their portion of the contribution.

Once the stock moves from Oregon to Iowa, T/SNUG is out of the picture making no demands on anyone. Any money left over from the project would go into the T/SNUG treasury to keep T/SNUG going; the T/SNUG treasury is very low at this present moment and therefore can not handle the project on its own.

T/SNUG suggests that FWD Computing, our last and soon to be full time vendor, could draw from the stock as he receives requests from his customers and thus fulfill the needs of the Sinclair community. Frank Davis would work out the monetary details with Jay Shepard, the owner of the storage facility in regards to shipping. Again, T/SNUG makes no demands.

To get the ball rolling, CATUG has contributed $200 to the project. It is hoped that other groups and individuals will send in their contributions for the project very soon as Rod has to get started very soon.

T/SNUG now makes a plea to individuals and Sinclair User Groups to send in contributions for the project.

Abed will keep us informed as to how the project is going.

Bob Swoger

Input/Output

by Abed Kahale

From: Bob Swoger Sent: 08-10-97 10:18

After reading ZXir QLive Alive! (Summer 97) I noted a few needs to be corrected. Remove all references to "MMCC BBS" and replace it with "The Club BBS". Still the same phone number.

In regards to Dave Lassov's blurb on page 3 and 4 in response to Gil Parrish's fine LarKen first time users article: What is JFORM? We have never heard of it. Omnibus with pull down windows??

Where do you get that? The only Omnibus I've ever seen was from Canada and was well named. It isn't one program but rather gobs of programs located all over the place (OMNI means "in all directions") on different drives.

Did you ever try DFM? There is no clue on the screen for the first time user. No manual came with it. I did, however, get a manual from the author, Jack Dohany, some years later, but no manual for DFM came with the LarKen system when I received mine. DFM turned out to be a very powerful tool but it isn't the fastest easiest way to operate the LarKen Disk system for the new or casual TS2068 user.

Gil seems to use a monochrome monitor. Monochrome monitor users should modify their L.B1 program to use the BLACK PAPER mode [0] rather than the stock BLUE PAPER mode [1] for Color Monitors. As for Color Monitors, I've tried them all in the composite video mode, Apple, Commodore, Amdek, Zenith and Magnavox. The best is the 40 column Magnavox by far, with the 80 column Magnavox a close second. Zenith is a good third choice. Going to the RGB input on the Magnavox gives superior performance getting rid of the wiggleys mentioned by Gil.

Dave's mention of the call to non-maskable interrupt location is too casual. This is the location firmware programmers go to in case of a crash because nothing can prevent this location from executing code.

--==GATOR==--

Dear Abed,

Received the latest ZQA! and immediately spotted the Sinclair Email List on page 7. No! ... that isn't really true ... I read some of the items on pages 2 - 5 ... and spotted the list when I turned to page 6/7! Right then and there, I decided that my Email address should be available to the group. Anyway ... here's my address <oranur@juno.com>

I'm NEW to Email and decided to go with the "no cost" JUNO service! I use a 386 IBM compatible (80 Meg.) for my Email correspondence because I had no idea of how I could use a 2068 for that purpose.... I was pleased to see my "surplus T/S stuff" ad on page 23 ... Thank You, Sincerely,

Fred Henn oranur@juno.com

Abed,

Here is my valid e-mail address:

swensont@jack.sns.com

swensont@geocities.com (now pointing to jack.sns.com)

Tim Swenson swensont@jack.sns.com

Hey, Abed!

Got your newsletter (Autumn 97) yesterday. Missed the request for donations to T/SNUG for the purpose of keeping the RMG Timex/Sinclair stuff out of some Oregon Landfill. As all your readers seem to agree, the newsletter format and articles are most informative BUT....

I see, by reading between the lines, there seems to be two products out there many of us TS2068ers have never heard of before. Why don't we get something about them in print? I'm talking about David Lassov's article entitled TeleCom Menu on Page 16 of Vol.7 No.3. He keeps talking about ASAPFax, do we have FAX for the TS2068?

How about an ARTICLE PLEASE! Will we need hardware that will be gone by the time we see an article?

How about the reference to the "Dallas SmartWatch" for the TS2068/Spectrum? We could sure use an article about this. Is it still available? How about schematic and overlay? --==GATOR==--

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Abed,

A while back, I recall your asking me to expand on these hardware items for the 2068, and I declined for fear of licensing problems, etc.

Well, on pages 16 and 17 of the last issue of ZQA, we have given out the relevant telephone numbers (and a lot of other telephone numbers, as well, I might add!)

That is the extent of the information, I felt permissible to give out, in order that interested parties talk with the original developers, and so on.

Since I am eager to pass on some of my experiences with the hardware, that interests our readers, don't you think you can help me with what revelations might be appropriate?

Sure don't want to get us all in trouble !

KEEP ON TIMEX 'n .....

David Lassov

You have not infringed on anyone's rights by just mentioning the name of the two products.

I hope these two gentlemen would provide us with information about the software to keep our members informed.

RMG

I don't know how much the CATUG treasury has, but I recommend and cast a vote for CATUG buying all the stuff ... it can't come to much more than $200 after shipping costs are added on. Wasn't there something like $500+ in the CATUG treasury? Its been so long, I really don't remember.

Anyway, my impression is that CATUG is the strongest (last) 2068 group, and it only makes sense that they would strongly consider acquiring RMG's stuff (which I presume is 90% 2068 stuff). Bob or Phil can inventory it

and the group could be the repository of spare parts for the rest of the users in the country. Just a thought.

Of course, the other alternative is for T/SNUG to buy it; but, I think CATUG should consider shouldering the load. This way, Bob might be prompted to printing a Nite-Times News with a periodic listing of what is available ... one issue, hardware; the next, software; then, books; and, so on.

I sent Gary Norton and the program author a copy of QLATter -- a stripped down version of QLAMBer (what QLUTter is to QLUSTer [whatever THAT means!] ... it means less functions, but it will run on an unexpanded and unenhanced QL) ... and, QLATter has been placed in the public domain to be used as a front-end for QLAY, and they can distribute it freely.

Al Feng

I'll send the QLATter.txt (actually, I guess it will be appended onto the end of this message).

I found out (confirmed) that the reason that the QXL was not responding was because the more recent versions of the SMSQ operating system presume that a 16-bit interface is being implemented. Up to version 2.51 will operate the card when it is only utilizing an 8-bit bus connection ... I don't know if that makes sense to you.

Al Feng

As for **critique** on David's menu program... see the CATalog printouts on page 17? His AUTOSTARTs are two tracks long, what a waste. He didn't read my ULTIMATE AUTOSTART article. See how he uses RAND USER CODE "d" in all his programs instead of RAND USR H, wastes 3 bytes every time!

Those CLEAR 30000s were the tip off, they should read CLEAR 27577, the whole TS2068 world should know this by now! His menu only works either the Timex or Sinclair mode, not both. And did he really send in the program on TS2040 printed paper? YUK!

(*He did, at my request because I could not rely on the Email version that I had to proof read. So I just made a picture of it. Next time he will send a disk and then I can print it.*)

We surly could type in the program if only he'd have used BS2TXT, all of us LogiCall people owe to make newsletter articles readable.

David shows a menu and mentions selecting "S", there is no "S" in the menu print out that I can see. David did have another mistake in the article, he mentions "Jack Dohany's MSCRIPT". MSCRIPT is actually authored and owned by Steve Pagliarulo of Micro-Systems Software, Inc. of West Palm Beach, Florida. Steve also authored MTERM and MTERM II to go with it. I own a legal copy of MTERM that was never touched by Jack, it is the only version that works with the keyboard overlay from E. Arthur Brown.

I talked to Steve and he still refuses to release the code to public domain as he claims that he still uses some of it in Amiga products. Jack only added Disk Drive capability, removed the onboard helps, added other features to MSCRIPT by writing new BASIC drivers for it as I had to do for LogiCall to work with it. Jack and I, as now does Frank Davis, always had to make sure the purchaser had a legal copy of MSCRIPT before releasing our stuff to that purchaser.

So, Steve Pagliarulo owns the rights to MSCRIPT and MTERM - Frank Davis owns the rights to Daisy authored by Bill Jones. --==GATOR==--

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Abed,

The **only** people to complain of having difficulty, downloading from SOL BBS, were **not using** 2068's!

As you may know, this is the only BBS -- **in the world** -- to run **entirely** on a Timex-Sinclair Computer, Model 2068 :-)

The downloading problem for people, who call in on an Apple or PC, concerns us **largely**, and Bob has given us an idea of how to proceed, after his **fine** description of the problem in the current issue of ZQA! Magazine.

We will use the pages of ZQA! Magazine to describe our progress, and

THANK YOU, Bob !!

David E. Lassov: sysop, SOL BBS @ 520-882-0388
520-882-3972 (voice) emanon@azstarnet.com (Email)

Did you see my posting about needing a

good Desk Top Publishing software?

(for the TS-2068)

If so any suggestions?
Thanks,

Bill Club BBS

I received copy of newsletter. I thought it was interesting.

What was the program that did the layout? *(MS Word for Windows)*

Is it available for the QL? If so, Where can I get it? Thanks for your help.

Bill McKelvey
612 MERCER AVE
SPRING LAKE HTS NJ 07762

Abed,

I got a message from D. G. Smith (denny.smith @juno.com)... long-time JUNO user ... who must have read the ZQA! article. He agrees that version 1.38 has problems. I guess he did not experience the dial-up file corruption that I had ... he said that he was (is?) able to get it to work with a 2400 baud modem ... I'll insert his message at the end of this ... Al Feng

---

Al,

You have probably gotten other responses by now, but here are some of my thoughts. I've been with Juno since the beginning, and while I don't much care for version 1.38, the problems you describe must be from a defective copy or

install. I liked version 1.15 the best. The ads didn't intrude, or slow the computer, and it ran well on a slow 386 with Hercules mono and 2400 BPS modem. In fact, I installed and ran it on a 286 briefly.

When I finally "upgraded" to version 1.38, I had nothing but problems. I finally deleted all traces of it and reinstalled. No more problems, but it is much slower than the previous versions, and I don't like the way the ads take over when you first start the program.

Oh! No limit on Email messages, and you **can** do Faxes, Web searches, and binary file transfers with Juno's Email. Look for Dr. Bob's guide to fttp by Email FAQ.

Are you on-line in any other way, like (local or toll-free) BBS's?

Dennis Smith denny.smith@juno.com

Al Feng wrote:

Bob,

I don't know how much the CATUG treasury has, but I recommend and cast a vote for CATUG buying all the stuff ... it can't come to much more than $200 after shipping costs are added on.

Wasn't there something like $500+ in the CATUG treasury? Its been so long, I really don't remember. Anyway, my impression is that CATUG is the strongest (last) 2068 group, and it only makes sense that they would strongly consider acquiring RMG's stuff (which I presume is 90% 2068 stuff). Either you (Bob) or Phil can inventory it and the group could be the repository of spare parts for the rest of the users in the country.

Just a thought. You can print the availability list in the Nite-Times News ... one issue, hardware; the next, software; then, books; and, so on. Al

---

The problem with the RMG stuff is that no one in our group has room for it. There is a move afoot, however, to have T/SNUG forward the money to RMG. RMG would then forward the stuff to Jay Shepard for storage. Our last vender, FWD, would be the distributor for those who wanted anything. Contributors would forward the money for the cause to T/SNUG. CATUG will send in the first $200 soon. That is the plan so far. ---==GATOR==---

---

Abed,

Just a note about today's CATUG meeting. The meeting was to begin at 2:00pm. Don Lambert showed up at 1:PM. I was glad he did. I showed him around the house that he might see the TS2068 setups before the guys got here. Only Donaldson could not come. We had a tube steak barbecue out back on the patio. We never went into a formal meeting, all was said as time together passed. Don gave me a letter from Rod Gowen. I trust you also got a copy in that it contained the same news you passed on to me the other day on the Internet.

Nazir gave us an expanded dog and pony show that he gave at the picnic. Don wanted to see the **math co-processor** for the TS2068. If time and circumstance had permitted, Nazir would have had a demo of programs that could be **run on two side-by-side TS2068** which would show the increased speed using that math co-processor.

Frank sold many 14.4 modems at the picnic. We tried three of them here today in my setup and found that Nazir's did not work. A quick call to FWD computing and Frank said he'd hold one for Nazir for exchange. Nazir was elated! Cy brought a Modem and a tape recorder over for repair and we sent him home with all his stuff working again.

The CATUG money for the RMG project will be coming to you soon. Were you able to fill Rod's request for ZQA! on 3.5" disk?

---==GATOR==---

How about an article or a draft thereof, Nazir??

Yes, I did send Rod a disk and will do so from now on.

Hello Abed,

Thank you for the response to my letter. As for it being late, I would not worry about that.

I wish your wife the best. After all of the problems that my wife went through during her last 5 hears. I can empathize with you.

I would like to get the entire magazine on disk if possible. What you sent me was readable, but the files did not contain any carriage returns or linefeeds. I prefer to have those in the file as they break the text up into manageable pieces. I know that I said that the files had to be ASCII but ASCII can contain carriage returns and linefeeds, just no formatting commands or printer codes. The best way would be to print your files to a file. That way the text is laid out exactly as the magazine except on disk.

As you know by now, I sent a letter to Don Lambert that said essentially what I said to you last time. I am not sending him a letter this time.

If all goes well, I plan to get set up to access the Internet sometime after the first of the year. I will be using my little Type 'N Speak that I told you about. As it is strictly a text based unit, I will be using LINKS to get around and will be able to send/receive e-mail. I will keep you posted as to my progress at getting connected.

Sincerely,

Rod Gowen

From now on I will SAVE the newsletter in text (print to file) and mail you the disk. I have been only saving the printed masters for making copies.

Dear Abed:

Apparently a couple pages of the mss. for "More on QPC" I sent you on disk either fell on the floor or got lost in the translation, as page 11 in the current ZQA! jumps to the closing page Part of the missing text, of course, appears separately in my letter of clarification as printed on page 6

Rather than re-printing the entire text in the next issue perhaps you may want to provide readers with the enclosed "do-it-yourself" pieces with instructions for assembly. Except for a slight clarification I made in the third line from the top of page 2 in the enclosed hard cow, and my comments at the end, the rest of the missing excerpts are the same as in the ASCII copy J sent you on disk.

As always, I leave the editorial prerogatives up to you

as to whether to use this or not.

Best regards,

Bob

Yes, I have done it again, a whole page is missing, my apologies

---

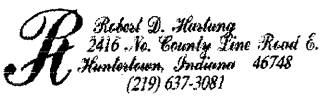
Dear Abed,

No apologies necessary! As someone who has put out newsletters, for nearly 50 years I know full well how such things happen. The classic definition of word-processing is a software program that cleverly conceals errors until a hard copy is printed out (and mailed).

The only one I am aware of who is interested in the missing page is Kenton Garrett. We frequently converse by phone and correspondence so I have already sent him the complete mss.

My mention of some who had questions about setting up a DOS boot floppy for QPC was in reference to remarks that appeared in recent issues of QL Today. As at minister for nearly 50 years perhaps I assumed another classic definition, that a preacher is "someone who tries to answer questions nobody else is asking!"

With best regards,



Hello Rod,

It is good to hear from you. Our annual computer club picnic in September came off well with Frank Davis, John Impellizzeri and Don Walterman in attendance. This picnic combines the Motorola, Glenside Color Computer and CATUG clubs. Frank sold 7 modems and some Spectrum CDs to guests.

LogiCall for MSDOS? Yes, what you read was true. Microsystems Engineering was the creator of MASS 11, an integrated software package for the DEC and IBM platforms. It was MASS 11 that inspired LogiCall for the Spectrum and TS2068. Getting frustrated with all the directory changes and file management tasks, why couldn't the PC be as easy to use as the TS2068. Why not indeed! And LogiCall was born.

The immediate language on the TS2068 is BASIC. The Immediate Language on a MSDOS machine is COMMAND COM. If COMMAND COM can't find a directive within itself, it looks for an external command file, then an executable, then a batch file to run. Since the machine had MSDOS 5.0 in it, I read that manual. It suggested writing batch file programs and placing them into a directory called BELFRY. Where else would a logical person put dot bats? Since batch files could call other batch files or other programs for that mater, and could also type to the screen and print to the printer and point to the different drives and do file management, I thought I would make life easy by a LogiCall for MSDOS machine.

Now, if you want Word Perfect, type W and ENTER. If want to point to the A: drive types A and ENTER. If you want to point to the DOCS directory inside the WP 5.1 directory on the C: drive, type only DOCS and ENTER. This saves a lot of typing. Both W and T do a bit more than just call Word Perfect and MT Easy. Word processor files are created in the DOCS directory. To send the file down the phone line using MT Easy, these files need to be placed into the SEND directory of MT easy. Similarly, files coming in on the phone line enter the RECEIVE directory of MT Easy. These files may be Zipped up or may need to be zipped up using PKZIP. T.BAT and W.BAT handle all of this without the users having to type anything extra even deleting old files after the moves and ZIPs. LogiCall for MSDOS also takes advantage of PKZIP and a collection of utilities from PC Magazine and other sources. Cursor control and a utility called LIST augment LogiCall features. One quickly finds that access to Word Perfect and other applications is faster using the LogiCall system than by using Windows. I have included LogiCall for MSDOS on this disk. LINSTALL will install LogiCall on your C: drive. You must modify your search path to include C:\BELFRY and PKZIP and PKUNZIP must be in the search path. Add L to the bottom of your AUTOEXEC and EM out the Windows startup call, WIN. Since we want LogiCall to run after Windows, we call Windows from a LogiCall batch file called WI.BAT or WIN.bat. So that Windows is not accidentally started with a call to WIN.COM we change the name of WIN.COM to WIN_.COM. One can find out more about LogiCall for the MSDOS by typing LOGICALL and ENTER once LogiCall is installed.

Since LogiCall is used at my work place many batch files are never used by most other users and can be deleted at some future time. I have asked Abed to send you ZQA! on disk. He said he did that. Finally, you mentioned SPRINT. I have never heard of it. Can you direct me to where you read about it? What platform does it run on? Do you have an Internet address?

Don Lambert attended our October CATUG monthly meeting. He brought a letter from you concerning the Sinclair inventory you need to clear out from your location. There is a plan underway by T/SNUG to keep this inventory out of a land fill. The ultimate destination of your Sinclair inventory will be Boxholm, Iowa, the home of Jay Shepard. No one else had available space to store your inventory. Jay has a barn. From Jay's location the inventory could be drawn on by Frank Davis, our last vender, to fill needs of the Sinclair community as needs arise. Since T/SNUG paid for the inventory, Frank would only reimburse Jay for the shipping of each item from Iowa.

It is hoped that member groups of T/SNUG will contribute dollars to the effort now referred to as the RMG Project. CATUG has sent $200 to T/SNUG to begin the project.

The members of Q-Box in Michigan that

attended our picnic in September, agreed that the idea seemed sound enough to work. We hope that an article in the next ZXir QLive Alive! newsletter will generate the funds you request. It is assumed that Abed will keep in touch with you to let you know how the project is going. You mentioned that excess funds would be returned to the purchaser. As the treasury of T/SNUG is getting dangerously low due to copying costs, return of excess funds might remain in the T/SNUG treasury to extend the life of the newsletter or be divided back to the original contributors if those contributors choose. CATUG has already chosen to leave their portion in the T/SNUG treasury. Please let Don Lambert and Abed know how you feel about this plan.

Sincerely,

Bob Swoger

I did receive a $200 check from CATUG. *Editor*

The Gifted Retiree

There was an engineer who had an exceptional gift for fixing all mechanical things. After serving his company loyally for over 30 years, he happily retired. Several years later his company contacted him regarding a seemingly impossible problem they were having with one of their multi-million dollar machines.

They had tried everything and everyone else to get the machine fixed, but to no avail. In desperation, they called on the retired engineer who had solved so many of their problems in the past. The engineer reluctantly took the challenge. He spent a day studying the huge machine. At the end of the day he marked a small X in chalk on a particular component of the machine and proudly stated, "This is where your problem is!" The part was replaced and the machine worked perfectly again. The company received a bill for $50,000 from the engineer for his services. They demanded an itemized accounting of his charges. The engineer responded briefly:

One chalk mark $1
Knowing where to put it $49,999

This was taken from the Alameda County District Attorney's Office publication.

In a murder trial, the defense attorney was cross-examining a pathologist. Here's what happened:

Attorney: Before you signed the death certificate, had you taken the pulse?
Coroner: No.
Attorney: Did you listen to the heart?
Coroner: No.
Attorney: Did you check for breathing?
Coroner: No.
Attorney: So, when you signed the death certificate you weren't sure the man was dead, were you?
Coroner: Well, let me put it this way. The man's brain was sitting in a jar on my desk. But I guess it's possible he could be out there practicing law somewhere.

emanon@azstarnet.com

RMG Project

What an excellent idea, let me extend my agreement, praise and continued commitment. My only suggestion is to perhaps, modify the use of barn as the building that could house these treasures. While there has been no livestock on the 182 Acres that make up the Shepard Farm d/b/a/ Circle JK Ranch, there still might be some folks with an agricultural background who would cringe on the thought of backing a venture to preserve and maintain a stockpile of orphan computer hardware, software, and parts in a BARN!

So, let's say the building to house this stuff will be in a building on a farmstead that's been out of use for 30 odd years and has a good roof and four walls or some some such description. And that I'll handle the merchandise as good as any reputable warehouseman, with lots of TLC.

I further suggest that the idea has such merit that if volunteer efforts are not productive, that a free-will levy be placed on all known members of anything Sinclair at an amount arrived at equally and if this falls short a follow-up levy be placed on the previous givers....Or some such method by some kind of conscription....What ever it's a good cause, right? So anything that works is fair.

Sincerely, **J**

From: jshepard@netins.net
Hiroshima '45 - T/S '83 - Chernobyl '86 - Windows '95

I posed these questions to David Lassov:—

SmartWatch and ASAPFax

We diskuss herein two hardware extensions to the Timex-Sinclair Computers Model 2068, which have proven convenient addtions to our little setup here, at the northern end of the Sonoran Desert. You see, it all began as a mail order of less than $200, after two years working on the TS1000, itself picked out of a pile of computers along the wall of a thrifty drug store in Westchester, California, postal zone 90045 in Los Angeless at less than $100!

Are they hardware or software?

Well, it seems to me, that both Jack Dohany and Bill McKelvey have merely adapted hardware devices for old IBM XT/AT clones each available from Jameco Eleotronics to use on the TS2068 (among other machines) by writing the interface Software in Z80 assembly code and adding a driver in token BASIC, which is used by the Timex machines.

On which computer do they RUN?

The SmartWatch gives both time and date on the beemer, as above; the ASAPFax not only sends but also receives character faxes on the XT/AT; and, they both have been converted, as above, to RUN on the 2068. However, not all features of ASAPFax have been so converted, due to time and space limitations of the 2068. and, both Jack and Bill have versions of their devices that run on other computers.

What do they do?

After SmartWatch is installed we set time and date Variables, by calling SmartWatch and PRINTing any desired

data. What we do is a **RANDOMIZE USR PROG5,** where PPOG5 is the address of the BASIC program "plus 5" (PROG+5.) After ASAPFax is installed, it PRINTs incoming character faxes on our attached printer. It also sends character faxes out over the city telephone lines, where they are readily received by all models of fax machines in use nowadays.

How do we use them?

On SOL BBS, we have extended Maxcom communication software to stamp the arrival time of all Incoming messages etc., and to SAVE this Information as part of the message base. In all our word processors, derived from Daisy we include Time/Date of storage with each SAVE of a document to disk. Also we PRINT the Time/Date of PRINTing any *letter*, while using this software, underneath the letterhead. Lastly we have Included the SET/REST facility for SmartWatch as "Press e" on the Telecomm Main Menu, diskussed last time.

What is good about their use?

Well, SmartWatch provides SOL BBS with timing capabilities, the same as, or better than, the "big boys" have. And, that goes for word processors too. The best thing about ASAPFax is the *surprise*, with which everybody receives messages from the 2068! And it is good for sending/receiving faxes to/from everywhere. However, such communication can contain *no graphics*.

What is bad about their use?

The only limitations and/or drawbacks involve ASAPFax. Well, when installing SmartWatch into SOL BBS, we had to get some POKEs from Jack, because of a storage conflict with the communications software. But, as for ASAPFax graphical data create nothing but problems.

But, of course, the 2068 was never designed to process graphics. Also, the normal configuration of ASAPFax can use up a lot of paper in a hurry, but we can work around that. However, a persistent problem is the inability to read the clock, upon sending or receiving faxes. This shuts down the ability both to print selected stored faxes and conveniently to stamp outoing faxes.

What is the best way to use them?

I don't know. I detest assembly language programming, so we use SmartWatch only in places accessible to BASIC code. So, if you have a lot of applications written in BASIC, then have a ball !

If you don't mind a little assembly language programming, then Bill's simple numeric codes could be easily modified to read SmartWatch at appropriate times thus freeing up additional features of ASAPFax, as above. As it now stands, ASAPFax works best with its own telephone line, as we have not found a workable switch, for automatic routing of telephone calls between SOL BBS and ASAPFax. In other words you have to make an appointment in order to send us a fax !

Where Did We use Them?

Actually, I think we have covered that adequately above, diskussing the SOL BBS communications software and our word processing software, derived from Daisy. So, let us use this space to say, that these are both ideal candidates for their own banks of CODE, in the case of a 2068, expanded to 24 or 256 banks!

You see, the tape recorder CODE is already in EXROM, and hard disks and other I/O processors could go into those other banks, thus freeing up the Home Bank, for more coding of features, or they could be used for all kinds of rapid data storage like Larry Crawford's Inter Bank Data Base.

David Lassov

This is an interesting document, which you might consider for the next issue of ZXir QLive Alive! Here begins a progress report on the testing of ASAPFax for the 2068. We use FX2068.Ba, which also calls FX2068.Ca, to set the unit up for SENDing a fax. Then, we use MS2068.BT, which also calls MX2068.CT, to create the fax and format the target telephone number. We quickly learned how to use FX2068 and MSCRIPT, to SEND faxes via ASAPFax and the city telephone lines.

RECEIVing a fax is still a bit of a problem, even after un-jamming the Manual Receive Button. The problem area is Fax Archiving. For example, we can't seem to rePRINT a received fax. This is probably due to the fact, that *all* the dates and times on the activity log of sent and received faxes are *the same*. Thus, we can't specify which fax to reprint!

TUCSON (AP) — A bank manager fed up with being robbed not only refused to give an apparent robber any money but also told her to leave, and she did.

The suspect, noted for donning a blonde wig, was arrested a short time later Tuesday after a witness saw her remove the wig in the parking lot and described her car to police.

Police held Kathleen Yvonne Tatum, 31, on suspicion of two counts of robbery, one of armed robbery and one of attempted robbery.

Manager Yvonne Greer "just said 'no, not twice, this is not going to happen twice,'" said Terry Zink, who manages Wells Fargo Bank's Arizona division.

Zink said Greer's branch had been robbed last month by a women wearing a blonde wig.

"When Yvonne recognized her, she walked over to the teller and said, 'What kind of transaction are we doing today?'" Zink said.

"She said the lady just looked up at her and didn't say anything. Yvonne said, 'I don't think we're going to do any transaction today. I want you to leave and don't come back,'" Zink said. "She said the woman just turned around and walked out."

Police said she was believed to have robbed three banks last month.

The fix seems to either involve an on-line clock or enter a unique date/time for each received fax. But, what happens, if we receive two faxes, *before* manually changing the date/time? Then, we can reprint neither? Also, ASAPFax is not erasing old faxes, probably because we can't reprint them yet, as above. We are especially anxious, to test fax reception with the printer type set to "none", since this offers the promise of making use of the ASAPFax unit in isolation, without any computer or printer! Well, for fax RECEIVE, at least!!

Finally, we are looking at how to incorporate an A/B switch into the configuration, either manual or automatic, in order to hide everything out of the way and make room !

David E. Lassov: SYSOP SOL BBS @520-882-0388
emanon@azstarnet.com (email)

Hi Abed,

I have a ZX81 keyboard fix that I'd like to share with everyone. Several weeks ago my ZX81 keyboard stopped working, when I opened it up I found the plastic thingy with

imbedded traces coming out of the keyboard was broken again.

This was the third time and when I cut the end to be even all the way across it was to short to put back into the connector. I unsoldered the keyboard connectors (be careful here, don't lift up any of the pads), then I soldered about a 2 inch long wire on to each pin on the under side of each connector and labeled the opposite end of each wire. I don't know anything about wire gages, I used wire that is a little heavier than wire-wrap, I also used some heat-shrink tubing to insulate each connection. Then I cleaned the ends of the keyboard cable and made it straight.

I plugged the cable into the connectors and wrapped the assembly with saran wrap, over that I wrapped tape (the saran wrap will keep the glue on the tape from getting into the connector). Then I soldered the lose end of assembly to the motherboard. The whole thing still fits inside the little black box.

"Ken Harbit" <krh03@csufresno.edu>

From: rigter@cafe.net (Wilf Rigter)
Subject: Re: Internet operation with a ZX-81
Sender: owner-sincnews@psg.corn
Hello Fred,
In article <19961222191000.OAA23490@ladder01.news.aol.com>, you wrote:

<Does anyone have information on a modem to use with a ZX-81 so that it can be used on the Internet? I want a modem of at least 2400 baud to download E-MAIL, text. Anyone have any ideas, if so please contact me.>

I posted a 2050 compatible serial interface article in this news group a while back which has baud rates up to 9600. The ZX81 is relatively slow (in the slow mode) and is normally limited to 300 baud. What is needed is some custom video software to increase available CPU time to process incoming data.

At 2400 baud with 8 bits no parity 1 start and 1 stop bit, the actual data rate is less than 240 bytes per second which requires that the data is sampled 4 times per video frame. It is possible to service the serial port every 4 ms (in the slow mode) if the screen is broken into 3 windows with sampling in between windows.

Fred Nachbaur did something similar with his ZXT80 hires terminal software (at NVG). I will try to cobble something together to try this idea with standard terminal software (ZTERM).

BTW what terminal program are using now?

Cheers, Wilf

From Frank Davis E-Mail

To: Frank Davis <fdavis@holli.com>

Subject: **Z88 com program**

Sorry this took so long to get back to you. Your message to me got corrupted somehow, at first it only looked like a message header with no text until I saw the cc: lines which had the message. Weird ... I put a copy of how the message showed up on my end below.

Anyway, I use the Worldport modem with the Z88's built-in terminal program and also a program called ZCP which basically integrates with the built-in terminal to give it X-modem file transfer capability. I have also used it with Z88COM but I prefer ZCP. Settings in the Panel are Xmit & Rcv baud - 9600, no parity and yes for xon/xoff -

Settings in the modem are (from the AT14 command): B0 C1 E1 F1 M1 Q0 V1 X7 Y0 &A3 &B1 &C1 &D4 &G0 &H1 &I0 &K1 &L0 &M4 &N0 &P0 &R2 &S0 &T5 &X0 &Y1

I don't think I had to change any of the S registers from the factory settings. Of the above, the critical item is the &R2, which, just like for the QL, forces the modem to obey the handshake signal from the computer.

John Impellizerri

P.S. FWD Computing does still happen to have a few of these modems let for $45 each.

From: Matthias Jaap <sa6z220@public.uni-hamburg.de>

Subject: **Project 81**

Sender ownepsincnews@walnut.holli.com

I start a project called 'Project 81' that will help to preserve old ZX81/80 documents. If anyone has ZX81 related documents/manuals and can scan or type them in, please contact me!

More information is available on my home-page:
http://www.hh.schule.de/hhs/mjaap/zx81.htm
My E-Mail address:

Maffhias-Jaap@hhs.hh.schule.de

From bcollins@horne.ifx.net Sat Oct 5 20:30:08 1996

Subject: **Z88-to-Mac problem answer**

Just to let anyone who is interested know - I figured out how to get Z88-to-Mac file transfer and conversion utility work on my Powermac clone running MacOS 7.5.3: Start the PowerMac with Extensions Off.

I also tried it on a Mac IIci also running MacOS 7.5, but with fewer extensions. Evidently the troublesome extension is one of those on the Powermac but not on the IIci. Maybe I'll figure out which one.

So anyone who has a Sinclair (Cambridge Computing) Z88 computer and wants to transfer files to a PowerMac or clone (my clone is a Power Computing Power Center 150) can do it using this method.

To start the Mac with extensions off: Hold down the shift key while starting, until the message 'Extensions Off' appears on the screen. Then proceed as instructed in the Z88-to-Mac instruction book. It works fine, at least for text.

Haven't been able to get it to transfer a Pipedream spreadsheet as a spreadsheet yet; it will transfer it as a text file, and will do the .WKS conversion, but I haven't been able to get the spreadsheet on the Mac to use it.

The Z88-to-Mac utility is available from Sinclair/Z88 dealers. I got mine **from Frank Davis, FWD Computing, PO Box 17, Mexico, IN 46958, USA, phone (317) 473-8031.**

Bill Collins

To: sincnews@psg.com
From: bill collins <bcollins@home.ifx.net>

Subject: **Z88-to-Mac problem/question**

I have a Z88 and a Power Computing Macintosh clone (Power Center 150). I recently bought a Z88-to-Mac Link so I could transfer files between the machines. Hooked up the serial cable provided, to the Z88 serial port and the

modem port on the Mac, loaded up the Mac program in the hard drive, and installed the EPROM in the Z88, then powered up and started both programs per the instruction book with the Z88-to-Mac link.

Everything seemed to work, except the Z88 did not show up on the transfer window on the Mac. All the other drives on the Mac showed up on the transfer window, and I could switch among them using the DRIVE button on the panel, and the Z88 displayed 'PCLINK 2 Running,' but the Z88 did not show up on the Mac screen. Tried putting the serial cable in the printer port on the Mac (also serial), but still no luck. Tried plugging and unplugging the cable, etc. Still no luck.

Has anybody encountered a similar problem? Any advice?

Bill Collins

From: dharkhig@delphi.com

Subject: **Speccy surfs the net!**

Sender: owner-sincnews@psg.com

Yes! It's true - you CAN surf the net from the comfort of your own rubber-key 48K Speccy.

Here's how to go about it....

1. Get hold of a VTX5000 modem from Brian, plus the PD tape 1. This will set you back around a tenner.
If you've got a +3 or +2A you'll also need a Fixit.

2. Find out what the local GNS access number for Delphi is. Call 0171-757-7080 or Email ukservice@delphi.com

3. Load the **Firescroll software (Specterm will not work) and set the terminal options to 7 data bits, even parity and 1 stop bit.**

4. Dial the local access number, press the line switch on the VTX5000 down, and enter terminal mode. At the prompt enter DELPHI.

5. To sign up for free access until the end of the current calendar month, enter GODELPHI as the username and FUTURE as the password. Note that you **will** be charged at 3p per minute for using the local access number, even during this free period. Unfortunately I have been unable to get the Speccy to work on the main number...

6. Once you're on, you can find a **text-only** Internet Navigator, Usenet browser and loads more. Entering **/WIDTH 64** at any prompt will tend to make the display more readable.

And that's it!!! **Firescroll's** quite nice to use and you can easily prepare Email off line (I'm writing this in Tasword II) and upload them later. You can also capture any replies to the buffer to read off-line.

Garry Lancaster
Dharkhig@delphi.com

RECENT QL FREEWARE

(Oct. 1997)

As a big fan of Freeware, I keep an eye on what Freeware comes out for the QL. I use the Internet to keep current with the European sources. A number of QL authors or QL BBS's have web pages in the Internet. Below is a list of some of the more recent stuff that I have come across over the last few months. Most descriptions are taken from the web sites and I really have not tested each program.

EDI182 - A very efficient and versatile editor for plain text. Includes line numbering and deleting line numbers inclusively. Suitable for any QDOS style system. (24K)

C1M - The (no longer supported) Computer One Monitor modified to suit any QL (QDOS or SMSQ) system from JM on. Successfully tested on QL with (Super) Gold Card and QXL. Extended to tolerate the Pointer Environment. (15K)

AREF2 - A Cross Reference generator for "DISA"-style GST assembler text sources. Executable compiled job as an example for the IO2 toolkit. Do not use with pre-8/96 versions of IO2 or with already active PEX versions prior to PEX 2.0. (85K)

QSEND - A group of functions and procedures to facilitate some inter-job communication, by transferring text and other data via PIPEs to and from I/O CON channels, or other PIPEs. (28K)

RecoverQ - Can be used to recover damaged files from HD/DD/ED floppies, backing up disks, copying foreign media as DOS, Atari, or QL with "bad" structures, surface testing, fast-formatting, or formatting to user defined specifications. (164K)

UHR - A job with a simple analogue display clock of variable size (by string parameters) from 12x16 pixels up to the full screen. It should arrange itself in a button frame, if present, and will always remain visible. (11K)

MEMV - A visual memory monitor job, taken from "memdisp", corrected to some extent, and modified to suit the requirements of the different QDOS/SMSQ operating systems and screen sizes. May not work with the AURORAs high resolution screen. (5K)

CDISK - A SuperBASIC extension for backing up single files, directories, groups of directories, an entire disk, and deleting directories. CBACK is an example program, supplied with the SuperBASIC source and as an executable job, that can further be used as a background job for backing up at regular intervals. (28K)

QL Profiler - This is used with C programs to determine how they operate internally, looking for areas where the program can be optimized. Helps C programmers figure out where the program is spending the most time. (60K)

QLynx - The Unix text-only Web browser has been ported to the QL by Jonathan Hudson. Two different versions are available, one for (Super) Gold Card and one for standard QL's. Will only browse local files as networking software has not been written for the QL.

QVFS - QDOS Virtual File System (alpha version) is an Internet style file system for the QL. Lets you access QL files similar to Unix file system. Unix like file system is translated to "real" QDOS file system. An example of translations is below:

/net1/floppy1	n1_flp1_
/printer	ser1ht
/w2/	win2_
..	upper directory

You define how you want the Unix file system to translate to the QDOS file system. This system would allow for faster porting of Unix applications because no changes would be made to the source code about the filing system.

Qascade - A PE menu-based way of executing programs. You define the structure of the menu and the commands that it executes. Very similar to the "Start" button in Windows95.

Exorcist v. 1.12 - A front-end for Ghostscript, the postscript viewer.

Winlink - A PE utility that allows you to link and unlink Qbuide partitions.

ZipBack - A backup utility.

TGBack v. 1.07 - The latest version of the hard drive backup program.

All of the above programs are available from:

QHJ Freeware
c/o Timothy Swenson
38725 Lexington St. #230
Fremont, CA 94536

Just send enough disks for all of the programs you want and return postage for the disks. If there is any freeware that you are looking for, let me know. If I don't have it, I can usually get it fairly quickly.

swensont@jack.sns.com
<swensont@sirclive.csd.sgi.com>

Sinclair E-Mail List

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Walterman, Don	walterm@ix.netcom.com
Washington, Barry	mf0002@epfl2.epflbalto.org

Looking for an address or a person?
The best on-line search engines are:-
www.altavista.com
www.yahoo.com

FROM THE CHAIRMAN'S DISK

Donald Lambert

Here it is November and for some of us it is the winter months that are beginning. Not to scare you people in the southern states away from this area but when I mowed the lawn for the last time in October I saw snowflakes coming down. And this month we had our official first snow of the year but it amounted to nothing more than wet streets since the ground was so warm that it all melted on touching the ground. But that weather signals a return, for a lot of people, to computing with the T/S computers.

Many of the projects that I had in mind to do when I last wrote just didn't get done. But I did get some projects finished but in some cases not tested.

Printer Ribbon Re-Inking

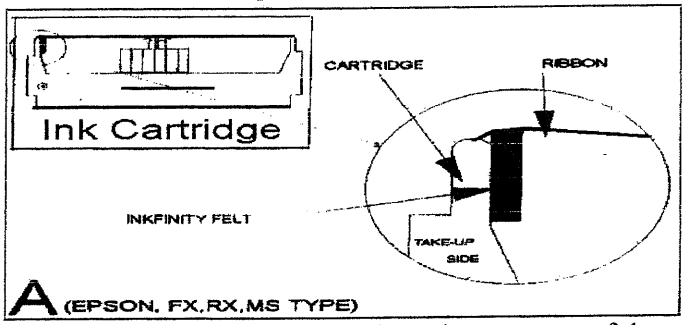
First I will give the name and address of the place that has the supplies and directions of how to do it:

RAVEN SYSTEMS OF OAKLAND NJ INC.
P. O. BOX 253
FRANKLIN LAKES NJ 07417

Send them a LSASE for the price list and instructions. They also have kits for the INKJET and BUBBLEJET plus color ink for the dot matrix printers. None are cheap and the $5.00 per order shipping is not cheap but it is a lot cheaper than buying ribbons and having them dry out prematurely.

Several years ago I ordered 4 oz (received 4 one ounce bottles) of black ink and three sets of felt pads. The felt pads are off white and 3/4 inch by 1/2 inch by 1/4 inch.

The instructions I had then said to glue with Krazy Glue a pad where the ribbon will rub against the pad near where it enters the cartridge. (The new instructions have drawings. See the enlarged copy I made.) I guess that is to give the ink time to be evenly distributed on the ribbon. So I glued up three ribbons and before testing for print head clearance I inked the pads. Well, the print head would hit



the felt pad and keep on hitting the pads on turn on of the printer. So I stored the ribbons and forget the project. Then this last summer I took another look at the problem and I glued one pad to a ribbon and I checked for clearance and with an exacto knife I trimmed off the pad where the print head would hit it. Tested and on turn on the print head did its run to the left end of the carriage and did not repeatedly hit the pad trying to go further left as it did on the inked pads. And I had bought an electric screwdriver so I used it with a screwdriver blade out of another set to run the ribbon clear around the cartridge. I put a drop of

white out on the edge of the ribbon for a marker and timed the time it took. With this ribbon and screwdriver it took 2 minutes and 13 seconds. I had put several drops of ink on the ribbon before hand. I tried the inking by printing out but it was not uniform. So I again added more ink and I redid the bit with the screwdriver. And since I didn't use the computer for a few days the ink had more time to distribute properly. I originally thought that I would have to add a drop of ink each time but I have found that the ribbon prints out very dark without that drop of ink each time. If it starts to fade then I will re-ink.

Crooked Printnig Cure

The other problem with my printer (EPSON LX-810) is that with single sheet feed the paper guides sometimes get bumped and the printing is at an angle on the paper. And once it even did that in the middle of a sheet when the printer got a hard bump. So I muttered about that till I decided to add stops to the paper guides. I carefully measured the distance between the left guide and the end of the paper tray and then cut a piece of wood to fit there. I did the same for the right side. I added a piece of wood so that the stops would stay in place and painted them about the same color of the printer and they hold the guides in place and no more crooked printing. While I was cutting I also cut a guide for the right side for when I use a narrower paper to put in a small notebook. The big expense of that was the can of paint.

220 Volts AC Power Supply

The Z88 EPROM ERASER is made in the U. K. and thus requires 220 V AC to power it. I had a transformer that put out 16 volts AC and so I watched for one to use to reverse and get 220 V AC. I did find a 220 V AC transformer that put out IS volts AC so since it was just a few dollars I bought it. And when wired and under no load the output at the load end was 208 V AC. Well it might work and might not I didn't try it. In prowling my favorite electronics place I saw a power supply that was in the wrong area and as I carried over to where it belonged I eyed the instruction sheet and it said 110/220 V AC input. It had no power cord and was a hefty thing to put out 5 V DC at 2A and 12 V DC at 4A. And from the double voltage input it had to have two 110 volt windings to make a 220 volt AC input transformer so if you connected one winding to 110 volts AC you would find a winding that put out 110 V AC. And thus if you connected those windings in series properly you would get 220 V AC. The price was right so I bought. There was a chart of what to connect to get what input. To use it on 110 VAC it said connect terminals I to 2 and terminals 3 to 4 and connect the input voltage to terminals I and 4. But if the input was 220 V AC to connect terminals 2 to 3 and the input voltage to terminals 1 and 5. So I connected it up with terminals 2 connected to terminal 3 and I connected power (110 V AC) to terminals I and 2. Then I tested across terminals I and 5 with an AC voltmeter when I plugged it in and there was 224 volts across terminals one and 5. But I had no case for the power supply. And also the DC amperage was halved because I used only one of the 110 volt windings to power the unit.

Huntington HamFest

On October 5th I went to the Huntington HamFest which is about an hours drive from here. I had a want list which included a color monitor (mine had died), a case for the power supply, certain chips for projects and 3.5 disks and disk cases for 3.5 disks. The hamFest was small. There were nine or ten venders outside and about 25 inside. This was not a make money deal since the venders (almost all radio hams) were more interested in visiting than selling. I found a color monitor (AMDEK Color-I) that was running and so I bought it. And I found some 1/2 height disk drives (400K) and a case that had originally held a power booster for a CB. At a quarter for the case I could not go wrong. The case was used to house the power supply. Lack of space prevented the installation of a switch or fuse but I can live with that. So one project got finished.

On October 13th I went to see Frank Davis and picked up another TOPPER for the Z88 and a modem for the Z88. It was rain both ways and that is about a 90 mile drive which took over two hours since about half of the way was on a narrow two lane road and there were a lot of bad curves and hills and no passing zones. Out of curiosity I would have driven to Mexico if the weather had not been bad since I was already in Peru. Of course these are all cities in Indiana and there is also a city Chilli but I am not sure where it is located.

CATUG Meeting

Then on the 19th of October (Sunday) I drove to Chicago to be at a meeting of CATUG which was held at Bob Swager's house. That is a 240 mile drive for me and on the toll road it seemed that I needed a mint to pay the toll. $3.70 to the end of the I-80 toll road and then in side Chicago was $0.40 every few miles. And at Bob's house I met several. I won't go into names since I forgot most by now and I did not write anything done. Even if I had my handwriting is so bad that I still would be guessing. One person that showed up was Phillip Kwitkowski who is getting taller and taller. He came with his side kick another senior in high school but not the same school. Nazir Pashtoon also showed. There was some T/S talk and some hardware work (testing the Z88 modem) and lots of general talk. And since it was a good day with warmth and sunshine (it clouded over and sprinkled) there was Bob in the back yard with the charcoal grill and an old hair dryer blowing the charcoal to a hot condition and we had brats and hot-dogs. I could tell that the two boys had been there a lot since they quickly hauled out all the stuff to eat. The only excitement was some yellow jackets that tried to claim everything but Phil with a paper plate disposed of twenty or thirty of the yellow jackets. I stayed over at the Hoffman Estates Red Roof and returned the next day. And then Tuesday was when the weather went bad.

Color and the TS-2068

In a discussion with Bob I learned that if the power supply to the T/S 2068 was too low of voltage (below 15 volts dc) you lost color. I never had color with the monitor that died (except for a minute or two at turn on) and then when I got the Amdek I had color more. Before with the Magnavox monitor the color would be there for a very few

minutes then it went to black and white. When I tested the power input under the load of the 2068 (I used a breakout box in the power line) I found the voltage to be around 18 volts. Then I received a letter from Abed and he gave me the location of the pot on the 2068 that controls color. But when I bought a second AmdeK Color-I monitor I wanted to test it with the computer I wanted to use it on. I found that it had color and it stayed color. WOW! So I finally this last week end, after coming home from the Ft. Wayne Ham and Computer Fest, tested all five of my working 2068's and found a couple that gave color with no adjustment. Seems strange to have color. And, like now, when I am using the word processor I turn the color knob on the monitor to get b & w or nearly so. So I guess I have that problem fixed for the time being. This T/S 2068 is one that I ordered with the Russel Spectrum chip installed inside when I was at the Indianapolis Computerfest in May 1987. I believe that I ordered it through Knighted computers. I since had sent it to Dan Elliott to have the magnetic switch converted to a slide switch on the end of the computer.

Ft. Wayne HamFest

On November 15th and 16th there was a Ham and Computer Fest in FT. Wayne. I was there both days. On Saturday the 15th there were too many people to see the flea market stuff. And of course most of the real bargains had been sold Saturday but I did see some stuff and bought a little Sunday. I bought another Amdek Color-I monitor from the same person that I bought from at the Huntington HamFest and same price. I was looking at a 1/2 height drive (5.25) and the seller couldn't answer my question of the density of the drive or even if it worked. "Here" he said take it with you, I will pitch it since I won't take it home". I bought very little other stuff. The drive turned out to be a 400K and tested out O.K.

At the HamFest I did not see but a few 5.25 disks and they were all high density. I did see some 720K 3.5 disks but no bargain for used ones at $0.25 each. If I wanted to go to MSDOS there were scads of used computers from almost free (some none working ones were free) to overpriced. Plenty of CD ROMs. I did see several Commodore, Apple and one TI computer. If I wanted to go Mac there was an early one for sale for $15.00 complete. I don't know if it was the weather or what but attendance was down from last year but it seemed that more people were carrying bags of stuff. I visited with Frank and Carol Davis and he told me about some of the dealers that left Michigan in 7.5 inches of snow to come to the HamFest. My car got some 1/2 to 3/4 inches of snow on it while I was at the HamFest Saturday but the ground was wet and not slippery.

Z88

This is something that I did while trying to get another connector from the disk drive to the Z88. I have later heard that the same setup is used for an IBM but I am not sure at this time.

Z88 XOB 9 pin D sub male to 25 pin D sub female connector.

9-pin	25- pin		
1	13	9-pin	25-pin
2	12	6	25
3	11	7	24
4	10	8	19 - 22 - 23
5	9	9	19 - 22 - 23

TS-2068 Modem

I have a genuine TS-2050 Telecommunications MODEM by Westridge.

Of course there is no documentation and I wonder if anyone can supply a copy of the original manual for the unit. I have the software for its use but it would be nice to have a copy of the original documentation for the unit. I will pay for the copying and postage or if the manual is sent I will copy and return.

Musicola

I have a program "MUSICOLA" that is in cassette from which I did get IT to load and saved to both the LarKen and the Oliger system by way of the NMI button. I found no way with the error trapping used to break the program. I need the documentation to be able to use the program. Again I will pay for copying and the postage if it is sent to me. Or I will copy and return the manual. Has anyone ever converted this program to disk so that the saves and loads are to and from disk not cassette?

Byte Power

Once upon a time there were these monthly cassettes of programs by the Boisvert Brothers. There were some very good programs on them. Has anyone ever converted these programs to disk? It seems that if so that they should be shared.

That's it for this issue. See you next issue. 0/0

(A Re-Run) *by Robert Hartung*

[This is where I goofed not once, but twice. Blame it on the computer! Editor]

For any who did a double-take ..... should have read:

```
OPEN_NEW #7,KEYS:PRINT #7,"HOT_GO":
PRINT #7, "ALTKEY'#',CHR$(92)" :PRINT
#7, "ALTKEY CHR$(39), CHR$(34)" :PRINT
#7, "ALTKEY '3','#'":CLOSE
```

A line editor might also be used to create a file with an unnumbered series of commands such as these, although one type of QL editor I tried that has a TSR mode of operation (Terminate and Stay Resident in memory) does not work in QPC for me. Apparently there is a conflict between the memory address it uses and the one required by QPC. Neither can the Toolkit 2 ED be used to directly create a DO file, but it can be used as follows to make a listing of numbered statements which create the above KEYS file when RUN:

```
10 OPEN_NEW #7,KEYS
20 PRINT #7,"HOT_GO"
30 PRINT #7,"ALTKEY '#',CHR$(92)"
40 PRINT #7,"ALTKEY
```

```
CHR$(39),CHR$(34)"
    50 PRINT #7,"ALTKEY '3','#'"
    60 PRINT #7,"LRUN BOOT"
    70 CLOSE
```

More On QPC

The gremlins that nibbled at a few characters in my first article on QPC seem to have devoured whole pages from the mss. I sent by disk to Abed for the follow-up "More On QPC." As the saying goes, "some assembly is required" to put together what was in ZQA! with what was not, using the following instructions:

In my previous observations about using WIN partitions on ZIP or other removable-media hard drives with QPC, I should have mentioned that such disks or cartridges cannot be switched once the emulation is started. Only the one originally in the drive will be recognized. Otherwise, when a DIR WINn_ or a RESET or exit of QPC is attempted the system will freeze up. A cold restart of the computer is then required in order to regain control. The only way I have found around this so far is to do an exit from QPC with the original disk in the drive, then make the switch and restart the emulation. Obviously, this is not a problem when a fixed hard drive is used to set up a WIN partition.

Some have had questions also about setting up the CONFIG.SYS and AUTOEXEC.BAT files as described in the QPC manual, without using the MENUITEM function. After installing QPC on hard drive d:, it may be called from a DOS boot disk in drive A:. First format a new disk using FORMAT A: /S so the DOS system and COMMAND.COM files are installed on it. Then use your DOS EDIT program to set up the following CONFIG.SYS file on this disk:

```
LASTDRIVE=G
BUFFERS=15,0
FILES=50
STACKS=10,256
COUNTRY=044,,d:\DOS\COUNTRY.SYS
DEVICE=d:\DOS\HIMEM.SYS/INT15=4096
```

Create the following AUTOEXEC.BAT file for the disk:

```
@ECHO OFF
PROMPT $P$G
PATH=d:\DOS;d:\QPC;A:\;
d:\DOS\MOUSE
REM d:\EPSON\GUEST
d:
CD\QPC
REM d:\STACKER d:
QPC -R -W:5 -P:1
A:
```

Note that names of the respective (d:) drives given for LASTDRIVE and all drive-paths should be adjusted in these listings to conform to those used in your system setup. A mouse driver must be installed for QPC to load properly, even if you do not use a mouse with it. In the line that calls for QPC to be loaded from its hard drive directory, the -R switch skips a key press to confirm QPC startup, -W:5 looks first for a BOOT file in WIN5_ and -P:1 sets LPT1 as the default parallel printer port. The two commands shown in REM lines and described in the following paragraph may be ignored if you are not using a removable hard drive or Stacker.

The first REM line is where a ZIP drive would be activated if you have one. Mine is the parallel port Epson version made by Iomega, for which this line calls its universal GUEST driver, which is in the d:\EPSON directory. If you are using a removable hard drive that auto-installs on system startup, then include the appropriate lines to do this in CONFIG.SYS and AUTOEXEC.BAT. If you have Stacker 4.0 installed on your system hard drive, be sure to include its DEVICE command in CONFIG.SYS, the necessary check-lines at the start of AUTOEXEC.BAT, and include d:\STACKER in the PATH line. A Stacker-compressed disk or cartridge may also be activated independently by using the command in the second REM line, where d: is the drive-name for the medium with a Stacker Anywhere file. If no Stacker Anywhere file exists on the current cartridge, then QPC will install normally, with access to the WINn cartridge if there is one. However, the batch file processing will halt if Stacker Anywhere activation occurs, so QPC -R -W:n -P:1 must then be keyed in manually. Interestingly, after QPC emulation is terminated and EXIT is entered to end Stacker Anywhere, the batch file will try to start QPC again. It stops with an error report.

When using the extended storage of a WIN partition or an ED drive, it becomes more practical if not a necessity to set up file directories. One reason is that some programs may use same-name files that would otherwise be overwritten or conflict with one another if placed in the same root (primary) directory. Another reason is that data files may be stored for easier access in separate directories such as DOC1, DOC2, ABA, DBF, etc. For instance, when I transferred to a ZIP cartridge of the QPC system all of the QUILL and ABACUS files I had collected over the years, I put those in a DOC1 library directory that I would only occasionally refer to. All those in current use went into DOC2. ABACUS data files went into ABA, and so on.

The MAKE_DIR command (available also on Gold Cards) is used to create such directories. It uses the syntax MAKE_DIR WINn_dir_ in which n is the number of the WIN partition and dir is whatever name is given to the directory being created. A DIR will then show the new directory name followed by ->.

The PROG_USE, DATA_USE, and DEV_USE commands are provided to assist in directing a program to the proper devices and directories for its program and data files. In this respect, recent versions of programs such as XCHANGE v.3.90 are quite well-mannered and need only a PROG_USE and a DATA_USE definition in their boot file in order to switch to the proper directories. DEV_USE definitions might also be placed in the boot file for the respective QUILL, ABACUS, ARCHIVE, and EASEL data directories. For example, definitions such as DEV_USE 1,WIN5_DOC1_

and DEV_USE 2,WIN5_DOC2_ might be placed in the XCHANGE boot listing, followed by PROG_USE WIN5_XCHANGE_ and DATA_USE DEV1_ This causes XCHANGE to look in the proper directory for its HELP and printer data, and when QUILL is activated, WIN5_DOC1_ is the default directory for its .DOC files. To switch to DOC2_ only DEV2_ and the file name need to be entered at a SAVE, LOAD, or ? prompt. Other DEVn_ definitions may be put in the boot listing for the other programs included in the XCHANGE suite, as shown in the last listing below.

To make the computer do most of the work, I placed the following BOOT listing in the root directory of my WIN5 ZIP disk so, with the -W:5 switch installed, it brings up a menu of all programs on the disk whenever QPC is loaded or reset. Note that only the first 3 of the 36 available o$(n) definitions are shown here as examples, but the actual listing may include definitions in lines 1 through 36 as shown in line 2.

```
    1 CLS: CLS #0: DIM o$(36,14): o$(1)=
"QUILL23"
    2 o$(2)="XCHANGE"
    3 o$(3)="DOkeys"
    37 FOR j=1 TO 36
    38 AT j-1-18*(j>18),20*(j>18): PRINT
CHR$(j+47+39*(j>10));"=";o$(j)
    39 END FOR j
    40 AT #0,0,0: PRINT #0; " Key: 0-9
or a-z to LOAD"
    41 slc=CODE(INKEY$): AT #0;1,15:
PRINT #0;DATE$; "   ";DAY$:IF slc=0
THEN GO TO 41
    42 sls=slc-47-39*(slc>57)
    43 IF o$(slc)="" THEN RUN
    44 IF o$(slc)="DOkeys" THEN DO
WIN5_KEYS: REMark KEYS in WIN5_
    45 LD$="WIN5_" & o$(slc) & "_BOOT":
LRUN LD$
    46 DEFine PROCedure sv: SAVE
WIN5_BOOT: RUN: END DEFine sv
```

Once your o$ definitions are entered, the above BOOT routine requires only a single keystroke to load the desired program boot routine in the specified directory. Note that the directory names must be exactly the same as those in the o$ array. The boot listing below is the one I use in the XCHANGE directory to load the XCHANGE program:

```
    1 CLS: CLS #2
    2 AT #2,0,0: PRINT "1 - QUILL use
DOC1"
    3 PRINT "2 - QUILL use DOC2"
    4 PRINT "3 - ABAcus use ABA"
    5 PRINT "4 - ARCHIVE use DBF"
    6 PRINT "5 - EASEL use GRF"
    7 n=CODE(INKEY$)-48: IF n<1 OR n>5
THEN GO TO 7
    8 DEV_USE 1,WIN5_DOC1_
    9 DEV_USE 2,WIN5_DOC2_
    10 DEV_USE 3,WIN5_ABA_
    11 DEV_USE 4,WIN5_DBF_
    12 DEV_USE 5,WIN5_GRF_
    13 SELect ON n
    14  =1: DATA_USE WIN5_DOC1_
    15  =2: DATA_USE WIN5_DOC2_
    16  =3: DATA_USE WIN5_ABA_
    17  =4: DATA_USE WIN5_DBF_
    18  =5: DATA_USE WIN5_GRF_
    19 END SELect
    20 PROG_USE WIN5_XCHANGE_
    21 PAR_USE SER
    22 EX "WIN5_XCHANGE_XCHANGE_EXE"
    23 STOP
    24  DEFine PROCedure sv: SAVE
WIN5_XCHANGE_BOOT: END DEFine sv
```

The apparent redundancy of repeating DEV_USE definitions in DATA_USE allows the default data directory to be pre-set, for example, to the primary program of QUILL, while at the same time allowing the WIN5_ABA_ directory to be used for ABACUS by prefixing any data file name with just DEV3_. An alternative would be to key F6 and return to the XCHANGE SET option to change the default data directory. For other BOOT routines that involve a single program, such as QUILL 2.30, DEV1_ and DEV2_ definitions allow selecting as the default either the library directory DOC1_ or the current files directory DOC2_. These definitions remain active after an exit from the program that used them, so doing a RESET is usually advisable. The little sv procedure is included to make it easier to save a copy of the listing while testing it just by typing sv.

Clarification

If you have Stacker 4.0 installed on your system hard drive, be sure to include its DEVICE command in CONFIG.SYS, the necessary check-lines at the start of AUTOEXEC.BAT, and include d:\STACKER in the PATH line. Note that, while QL programs find their data may be stored in a Stacker-compressed partition., QPC itself must be installed in a non-compressed drive partition.

This completes the mss. I sent in but, as always, the learning curve on new devices or software such as QPC and SMSQ/E seems to be open to exceptions and additions. For instance, although the QPC manual emphasizes that the QPC emulator program must never be installed on a compressed hard drive partition, according to Norman Dunbar's article in the Sept/Oct. QL Today, he made such an installation (before reading the instructions) and it worked OK. In Al Feng's article QPC the Missing Link) is the comment that some say a 386 CPU will suffice to run QPC, but in the manual the reason for requiring a 486 or higher is that it is designed to use commands found only on CPUs higher than a 386.

I never tried networking with my QLs (it was exasperating enough to get even one working at a time) but the extended commands described in the SMSQ/E and QPC manuals seem to provide ways of doing it. In the SMSQ/E manual is the comment that SERNET provides low-cost networking like the Toolkit 2-Network, allowing you to connect two or more machines which run SMSQ/E via the serial ports. The QPC manual states that the COM-port to which a mouse or other device is connected must be configured to "none" in SMSQ/E. Also, the interrupt which is used by such a COM-port device cannot be used by any serial port (e.g, if a COM-port device uses INT4 then neither SER1 nor SER2 may

use INT4).

Beyond quoting these comments, I cannot advise Al Feng on his questions, other than to contact Marcel Kilgus, the author of QPC, or Jochen Merz, publisher of QL Today and distributor of QPC through his Jochen Merz Software.

QLATter

by Al Feng

The QLATter front end program is being provided as freeware for QLAY users. QLATter will run on a QLAY emulation whose host PC only has 4 Meg. of memory. QLATter is based on QLAMBer. QLATter does not require TK2_EXTensions, and therefore lacks the functions which rely on TK2 code. For those who are familiar with some of my earlier programs, QLATter is to QLAMBer as QLUTter is to QLUSTer. The internal program functions [COPY, DELete, etc.] are accessed by the FUNCTION keys. Since QLAY uses the host's clock, the clock setting function of QLATter is superfluous, but remains. QLATter is QRAM (HOTREXT) and TASKMASTER compatible, and can be used as an alternate utility program for these TASK SWITCHing, front end programs.

QLATter may be distributed freely. Although this document is NOT extensive, please include it when distributing the program.

USING QLATter The TAB and SPACE keys are used when navigating the 'opening' screen. The ARROW or FUNCTION keys are used after an opening screen window is accessed. Some alphanumeric input is required for selecting "other" devices. When the main screen is displayed (this will show the files on the device), the ARROW (cursor) keys are used for moving the "box" from filename to filename. 76 filenames are shown per screen. The ENTER key is used for selecting the filename to be acted upon. Sub_DIRectories are accessed by moving the highlighting box over the DIRectory name as if it were a file, and pressing the ENTER key. QLATter provides five file management functions accessed by pressing one of the function keys when looking at the program menu: COPY ..... copy from any valid medium to another DELete .... delete file from any valid medium PRINT ..... print recognizes "_doc" extension FORMAT .... format any valid QDOS medium -- use caution VIEW ..... interruptable file viewing In addition, you can EXEC_W a program from within QLATter.

SOME KEY PRESSES The internal program functions [COPY, DELETE, etc.] are accessed by the FUNCTION keys. The (esc)ape key is used to return to the opening screen from one of the program's functions; and, the TAB key is used to slide the highlighted box to the right on this page, with the SPACE key used to open the selection. SHIFT key combinations expedite shifting screen "pages. "SHIFT + ARROW key to page up or page down if there are more files to be accessed. SHIFT + FUNCTION key combinations expedite shifting screen "pages" when the physical medium has been changed in a device. The (esc)ape key is used to return to the opening screen from one of the program's functions; and, the TAB key is used to slide the highlighted box to the right on this page, with the SPACE key used to open the selection. Changing DEVice type All valid QDOS devices are accessible; however, DEV_USE devices are problematic, and sub_DIRectories should be accessed directly.

To change the DEVice type:1) Simply presses '0'/'zero' (i.e., you want a new device number);2) Move the highlighted green (shaded) bar over the appropriate DEVice type (flp/ram/win) using the up/down cursor key(s) (the highlighted bar will also move if you press the first letter of the device name);3) Change the numerical value (1-4) using the left/right cursor key(s) if necessary (for numerical values greater than 4, then press the appropriate number key); 4) Press the ENTER key to accept your selection. Use the "other" option for selecting an option that is not otherwise available. Move the shaded/green bar over the "other" selection; input 'f', 'r', 'w', 'n' ('flp', 'ram', 'win', 'ndk') or the full three character designation; press ENTER, indicate a numerical value between 1 and 8, then press ENTER again.

If it is a valid, non-protected device on your system, its file DIRectory will become available to you. NFS_USE access is viable as long as the device name conforms to the three character medium name standard. The device designate "ndk"/n(etwork)d(is)k is suggested as the name of the file server's devices. THE DISPLAY As with many programs, QLATter's window size is dimensioned to fit a PAL television, thus providing as many as 76 (4 x 19) filenames per screen, with a 608 filename maximum (i.e., eight pages).Unlike programs which "order" the files, QLATter displays the filenames on the screen in the order they appear in a normal, command line DIRectory request. The filenames are stored in a dynamic file (FLIST_imp)and displayed on the screen in the order they appear in a normal command line DIRectory request. If Quill is your primary program (for example), then put it first on the disk and you won't have to page through several pages of filenames to access it. Put other often used files on your start-up disk near the beginning of the DIRectory to expedite access.

PROGRAM USAGE You must first SELECT the device being accessed. If it is other than win1_, then move the (green) highlighting bar to the appropriate device name using either the UP or DOWN ARROW key. If you want to change the device number, either use the LEFT or RIGHT ARROW key or a NUMBER key. After you are satisfied with the selection, press the ENTER key. The highlighted box will move over to EXEC_W. If you press the SPACE BAR, then you will open the main screen from which you can EXEC_W an EXECutable program. You can TAB the highlighted box to the right and

select UTILITIES, CLOCK, EXIT, OR SELECT_DEVICE (again), ad infinitum. If you TAB over to UTILITIES press the SPACE_BAR to open this feature, and then press the appropriate function key. If you encounter a flashing cursor key at any time, you must respond to it. Pressing the ENTER key is an adequate response. In the COPY function, you can indicate a new (different) filename on the destination device. To VIEW the contents of a file, you would:1) Press 'F5' to access the pre-VIEW function;2) Move the highlighted box over the filename;3) Press the ENTER key to select;4) View the contents of the file. File "viewing" can be interrupted and the viewing window is large enough to make text viewing convenient.

Quill _doc files will be roughly formatted on the screen under most circumstances. ASCII characters are inked "black" and non-ASCII characters are inked "green." To DELete a file, you would:1) Press 'F2' to access the de-FILE FUNCTION;2) Move the highlighted box over the filename;3) Press ENTER to select;4) Confirm (y/n).And, so on. Hard-COPY looks for line feeds, so raw SuperBASIC LISTings should first be imported into Quill. Hard-COPY recognizes "_doc" files and will generated loosely formatted output. FORMAT can be exited by pressing the (esc)ape key. If you accidentally press the wrong function key and indicate the wrong device, then input MORE THAN 10 characters, press the ENTER key, and you will be able to re-select.

Different colored screens are used for de-FILE (red field with white ink) and FORMAT (green field with black ink) since these are potentially destructive to data. The screen color for the non-destructive utilities is white with red ink. The screen color for the EXEC_W screen is white with black ink. CONTACT What makes one front end program easy to use and what makes one not is often subjective. Some of the features which I have found (or, about which I have been told) that make a program easy to use have been incorporated into QLATter. While QLATter is very easy to use, this is a very minimal document. If you have questions, you can contact me via the postal service or e-mail.

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alfeng@juno.com Feedback is welcome, though even really good suggestions may take time before being implemented.

HAPPY TRAILS,
AND COMPUTING, TO YOU ...

ZEX FOR THE ZX-81

by Wilf Rigter

From: rigter@cafe.net (Wilf Rigter)
Received by: walnut.holli.com (Frank Davis)
Subject: **ZEX for the ZX81**

Hello again and this time a special treat for all ZX81 dinosaurs:

It's ZEX time for the ZX81, turning your ATARI joystick or IBM PC into a virtual ZX81 keyboard. The joystick can emulate any key or combination of keys on the old ZX81 membrane or ZEX will translate parallel ASCII to ZX81 characters for you. ZEX includes a 2K RAM chip for storing the joystick key codes or ASCII lookup table and unlike most interfaces this one requires NO special software drivers or changes to existing ZX software. A short program is required for the ZX to upload the translation codes to the ZEX RAM before you can use it. The complete schematic for this circuit is too complex to draw with ASCII symbols but will soon be available in .GIF format together with the programming software from Steve's or Kevin's web sites. I have included a functional block diagram to help explain the inner workings of ZEX.

Next time I will describe a 2 chip EPROM 'brute force' version of ZEX called TYRANNOSAURUS ZEX. Until then, my fellow ZX81 dinosaurs, I hope you will enjoy ZEX as much as I do!

Wilf

ZEX - ZX81 EXPANSION INPUT PORT FOR PC OR ATARI JOYSTICK

The ZEX input port uses a novel method of translating the digital inputs (i.e. your joystick positions) into any combination of ZX81 keys. You simply stick your joystick to the ZEX port and plug the ZEX port into the ZX81 rear edge connector. Next load the programming software, KEMASUTRA, and select which ZX keys correspond to that position. The positions are defined as any combination of directions North, East, South, West and Fire. The program prompts the user through the programming steps and the screen graphically shows the ZX81 keys which have been programmed to represent the joystick position.

For example:

Enter the letter N to represent the North (UP) direction and the corresponding keyboard pops up on the screen with inverse characters (i.e. SHIFT and 7) indicating the keys that are simulated when the joystick is pushed to the UP position. You can erase the key combination and program a new combination by pressing keys one at the time and the display indicates the current combination by inverting the key character. Combinations like NW or NEF can also be given unique key codes. In total, a joystick can output 16 different key combinations.

Programming combinations like NS are not very useful since the joystick can not be simultaneously pushed North and South but if instead of a joystick you use 8 separate switches or a connection to the printer port of a PC, you can program up to 256 different key combinations.

Another short setup program, KEMOSABI, is run on the ZX81 to program the ASCII to ZX lookup table into the ZEX RAM.

ZEX operation can be explained by looking at the block diagram below.

The hardware on the left shows the normal ZX81 keyboard interface with the A8-15 address lines scanning the keyboard rows one at a time and the column data read through the ULA input port at I/O address FE. ZEX is

connected to the rear edge connector but operates in parallel with the existing keyboard. ZEX is scanned at the some I/O address as the keyboard, so the decoder enables the RAM at address FE. The data in the RAM is scanned by the CPU A8-15 address lines which are encoded to 3 RAM address bits with the 74LS148 encoder These 3 bits are combined with the 5 joystick switch contacts to form the RAM address.

The 74LS157 chips are used to select the joystick and encoded address lines at I/O address FE. I/O address DE is also decoded and causes the 74LS157 chips to connect the CPU A8-15 address directly to the RAM address lines in order to program and read the RAM contents. ZEX RAM address line A8-10 are available for selecting different stored key combinations for each game or can be used with PC printer port D5-7 data lines to enter keyboard data from the PC to the ZX81.

Transistor Q1 enables ZEX RAM OE when any joystick contact is closed and also turns on an indication LED to confirm proper operation of the joystick. This is important when debugging ZEX since bad contacts are often a source of problems. When connected to the PC, the base of the transistor is connected to the STROBE line and a capacitor on the collector is used to stretch the strobe pulse.

The ZX81 keyboard can also be read independently from ZEX at address BE. After programming the ZEX RAM, it is write protected with switch S1 and a simple battery backup circuit makes the whole thing nonvolatile.

VAL Function

by David Lassov

Bob Swoger-CENG108 wrote:

Your last statement is correct. XMODEM, Christienson's, wants the final block filled in with control Zs to complete the last block. Somehow XMODEM knows what to do with the CONTROL Zs to complete the file properly. Someone in TTSUC discovered the problem in someone else's XMODEM protocol for the TS2068 and fixed it in that program. Geo. Chambers might remember and have the article. I think the fixer was a state side member of TTSUC. --==GATOR==--

Here is an article for your next issue. Sure hope the 2068 uploads it to the Internet, in some kind of intact fashion! If you have any problems, reading it, then I can use the Apple!

It gives the updated row number in the code, for squeezing a message base in SOL BBS with some ZAPped messa0 yeeaahh, there seems to be some problem, so I'll use the other. ciao, baby.

The 2068 seems to have some synchronization problems with the net @ 1200 BAUD.

VAL

One of the most powerful, and (Oh, Yes,) useful instructions of the Timex-Sinclair computers is the **VAL** function. Unfortunately, it is also **unique** to the Timex-Sinclair computers.

The VAL function evaluates an arbitrary numerically-valued $tring. It only returns an error C, in the case that the string argument does not evaluate to a number.

Apparently, Bill Gates saw this in the early '80s and decided, that VAL was unsuitable for his instruction sets, since there is no limit to its execution time, and he was looking for something **fast**. However, VAL was deemed suitable for the evaluation of number strings, as in VAL "12345", which turns out to be a very economical way of writing 12345.

Now, I can hear you all yelling, that *you* also have a VAL on your own machine. But, I guarantee you, that it will only remove the ***quotation marks*** from about address constants!

But, the VAL, of which I speak, can be used to give the **elapsed time**, on-line with SOL BBS. It gives the updated row number in the code, for squeezing a message base in SOL BBS with some ZAPped messages. Lastly, and this example *hurts*, it is *extremely* useful in math modeling.

```
  4175 LET a$="INT(e-60*h)+1": GOSUB
8100: PRINT #7'' "Your ELAPSED TIME was
";h;":";VAL a$
```

(The minutes portion of **elapsed time** on SOL BBS ...)

```
  3000 DIM (155,64): let r$="r0+VAL
d$(r0,5 TO 7)"
  3225 LET r0=r: LET r=VAL r$: IF r<11
THEN GO TO 3210
  3300 PRINT '""Length of NEW MESSAGE
BASE is ";VAL r$-1;" !!"''
  3410 IF r=r0 THEN LET r=VAL r$:NEXT n
  1 FOR j=1 TO nc: for k=1 TO nc: IF
CODE b$(j,k)=32 THEN GO TO 3
  2 FOR I=1 TO i(k): LET s(I)=q(j,I):
NEXT I: LET p(k)=VAL b(j,k)
  3 NEXT k: FOR I=1 TO i(j): LET
s(I)=q(j,I): NEXT I: FOR I=1 TO i(j):
LET o(j,I)= VAL m$(j,I): LET q(k,i)=
o(k,I): NEXT I: NEXT k: RETURN
```

Some confusion can be avoided, by inserting a blank line (or two) BEFORE line 3000 and AFTER line 3410 of that BASIC Code !!

As can be seen, the last three statements constitute an elegant stretch of BASIC code. It implements a stage-wise updating facility, for simulating a math model. I have an entire simulation language (Systems-Oriented Language), which depends for its simplicity and power upon this very VAL function, as seen in statements 2 and 3. But, SOL is still-born, given the dearth of equipment, for running the code.

Dr. Wymore assures me, however, that IBM would be only too happy to build a VAL function into one of its machines, given a *special order*!

As a matter of fact, I do recall hearing from both Gateway and Dell, encouraging such special requests for customizing an order for personal computer! 0

+++IJXfDavid } E. Lassov: sysop, SOL BBS @520-882-0388rB 520-882-3972 (voice) emanon@azstarnet.com

PART 2 - Conventional Hacking Techniques

By now, you should have an idea of how simple machine code works. Now we're going to look at the usual techniques of hacking. There are five techniques, which are called Forwards Trace, Backwards Trace, Stack Trace and Interrupt Trace, in that order of difficulty. Of these, Forwards Trace and Backwards trace are the only techniques you can use without a Multiface, and are the most reliable methods. You should only really have to use the others in exceptional circumstances, which are, on the whole, games which don't have a lives system or a GAME OVER message. Very few games use unusual routines, since it's just a hindrance to the programmer.

We'll start with Forwards Trace. You've already had a go at this from the last part, so hopefully it won't be too hard to understand. Then we'll look at the backwards trace, followed by some practical examples.

Forwards Trace

For the forwards trace, you start with the lives initialization routine, and then work forwards from there.

The first thing you need to do is to find where the number of lives are defined. We've already seen how numbers are put into memory locations, and this is exactly what happens in most games.(From now on, all the machine code programs discussed here will be written as hexadecimal bytes, and as mnemonics.)

3E XX LD A,XX (where XX is the number of lives)
32 XX XX LD (XXXX),A (where XXXX is a memory location, which we will refer to as the "lives store".)

You have already come across these instructions, but just to resume, the number of lives is put in the A register, which in turn is put in the lives store, the overall result being the number of lives being put in the lives store.

To find this, use the search function on your disassembler(QUEST 16384 on STK), and search for 3E . So if you had five lives, you'd search for 3E 05. You may find that this instruction occurs a few times, but you will probably find that only one actually puts the value of A in a memory location straight away. If there appear to be two occurrences where the number of lives is put into a memory location, then you may have to test all of them. You can, in general, rule out memory locations in which the number of lives is put in twice.

If you want to confirm you've found the lives store, you need a Multiface. Load the game up, and while playing the game, alter the value in what you think is the lives store. If the number of lives varies, you've found the lives store. If not, try another possible location. If you can't find any memory location which looks like a lives store, you won't be able to forwards trace, I'm afraid, in which case you should try the backwards trace instead.

Once you've found the lives store, you'll have to search for occurrences of it. You are basically looking for code which takes the value out of the lives store and puts it in a register (normally the A register), decreases the number by one, and puts the new result back in the lives store. To get infinite lives, you have to overwrite the decrement instruction with a blank instruction so that the number of lives is left intact.

The code you want normally takes one of two formats:

1st type:
3A XX XX LD A,(XXXX) where XXXX is the lives store
3D DEC A (we want to remove this)
32 XX XX LD (XXXX),A (putting the new value in the lives store)

2nd type:
21 XX XX LD HL,XXXX where XXXX is the lives store
35 DEC (HL) We want to remove this

You may find that there are other instructions between these. Don't worry about what they mean, just ignore them.

In order to remove the decrement instruction, we have to do one of two things. The most common is to replace the DEC A or DEC (HL) with a NOP (code 00). If this gives you only one life, replace the DEC A with OR A (code B7), or replace the DEC (HL)with OR (HL) (code B6). Don't worry why!

Backwards Trace

Also known as "backtracking", a backwards trace starts from the GAME OVER message, and goes back from there to the lives routine. It is normally used when a forwards trace does not work or is unsuitable (e.g. when finding infinite energy), the easiest alternative is to use a backwards trace.

The first thing you need to do is to find out what message is printed on the screen when you die. Nine times out of ten it's "GAME OVER", but there are exceptions.

For GAME OVER you have to search for the following bytes : 47 41 4D 45 32 4F 56 45 52. This is GAME OVER in ASCII (look up the codes in Appendix A of the Spectrum manual if you like). Sometimes, you may not find it, in which case just search for 47 41 4D 45 (GAME in ASCII). If that search fails, then the GAME OVER text is not in an ASCII format (this is rare, because printing routines are considerably smaller when ASCII is used), and you can't do a backwards trace.

Once you've found the GAME OVER message, you need to find out which part of the program refers to it. Normally, a print routine will load a register with the address of the GAME OVER routine, then print it. One possible register is HL (as we have met before), but also two other registers called BC and DE. Normally, all of these three registers are referred to as "register pairs", because they are two registers, each the same size as the A register, working together, so they can address all of the memory. You want to look for the following:

01 XX XX LD BC,XXXX (where XXXX is the address of the GAME OVER MESSAGE)
11 XX XX LD DE,XXXX (as above)
21 XX XX LD HL,XXXX (as above)
(Remember that XXXX will be written "backwards" in the game's machine code!)

You should only find one occurrence of any of the above instructions. If you can't find any, repeat the search but take one away from the address the GAME OVER text is. (This is because sometimes there are Spectrum ASCII control codes such as 16 XX for PAPER XX before the actual text, and these are referred to as the start of the message). If that doesn't work, repeat the search taking one away again. Keep doing this and you'll soon find one of the above instructions.

When you've found the instruction, note down where it occurs. The part of the code you are now in is part of the GAME OVER printing routine. What you now need to do is go back through the code until you find either the code C3 XX XX (which is JP XXXX), or C9 (which is RET, which behaves exactly the same way as RETURN in BASIC.) Alternatively, you may find a blank area of memory (00 00 00 00 00 00 etc.) The address after one of these instructions is the START of the GAME OVER routine.

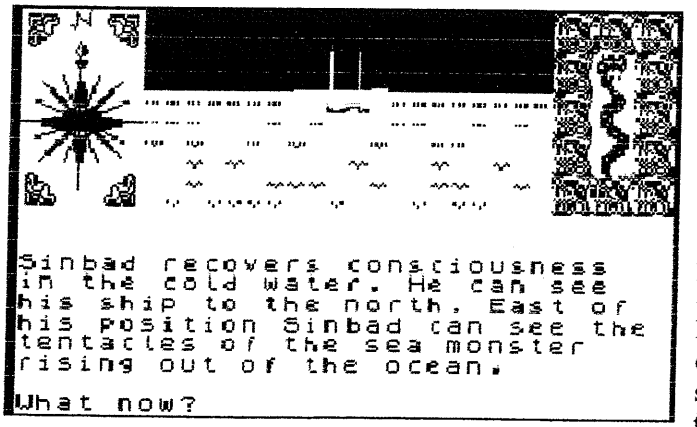
When you've found the start of the GAME OVER routine, you can find out which part of the code calls it. Then, to get a cheat, you can remove all parts of the code which branch to the GAME OVER routine. Search for the address of the start of the routine. You will probably find some of the following:
CD XX XX CALL XXXX
CC XX XX CALL Z, XXXX
C4 XX XX CALL NZ, XXXX
C3 XX XX JP XXXX
CA XX XX JP Z,XXXX
C2 XX XX JP NZ,XXXX
...where XXXX is the start of the game over routine. JP is similar to GOTO in BASIC, while CALL is similar to GOSUB (so that a RET instruction will return to the instruction after the call - except in some protection systems, but more about that later).To cheat, simply poke all three bytes of the instruction you find with 00 (so as to disable the CALL or JP). And there you have it!

Using the techniques of forwards trace and backwards trace, you should be able to hack most old, unprotected games.

Lunch Hour Activity at Work

by Les Cottrell

If you have a PC and Internet access in your workplace, here is an alternate to playing Solitaire or MineSweeper at lunch time. I have a registered version of Gerton Lunter's excellent Spectrum Emulator. I have discovered that I can run it from a 3.5 disk. (My company frowns on loading personal software on their computer.) If you don't have the emulator, go to Planet Sinclair on the Internet (http://www.nvg.unit.no/sinclair/planet/index.html), select emulators, then PC (if appropriate), and downLOAD Gerton Lunter's Z80 Spectrum Emulator demo to floppy disk. Un-ZIP the emulator to that floppy. Now, with luck, your PC will think it is a Spectrum when you double click on z80.exe. (I say with luck because it worked easily for me there is no guarantee that your configuration will be as friendly!) You should see a message that says you have about five minutes of normal emulation available. After five minutes the demo goes in to hyper-speed. If you are playing an arcade type game you're in deep trouble - fun to watch the little characters buzz around, but no way to keep up. But if you are playing a text adventure you shouldn't notice the difference. Unless you are running one with scene changes, then it repaints the screen faster than your 2068 - which is an improvement! I like this better than my registered version for text adventures.



Web site ftp://ftp.nvg.unit.no/pub/sinclair/snaps/games/adventure/text/ has a couple of hundred text adventures to choose from. Another good site is "The Spectrum Adventurer" (http://home.virtual-pc.com/isblpx/index.html). They have sorted through and describe the best files, most of which can be downLOADed from there. The "DOOR" series is useful to new adventurers because you can type help and you get a hint as to what to do next on some.

If you are new to the Z80 emulator here are a couple of hints if you don't want to read the documentation you have with the downLOAD:

Double click z80.exe and after the message disappears press F10 for the main menu. If you are in your office, select C for change and turn off the sound by pressing S. Press F10 and then press L for LOAD. Exchange the program disk for your disk of programs. Press ENTER and you should see the files you can LOAD from your floppy. If you haven't changed disks or added any you will at least see "diagram.z80" which is the tape loader circuit and instructions shown in a previous ZXir QLive. Use the cursor keys to select a program and press ENTER. The main menu will appear overlaying the initial screen of the file an press B to go back to the file and you are working with Spectrum.

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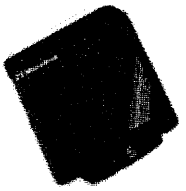

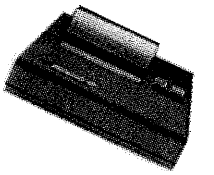

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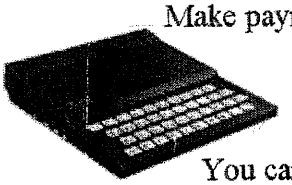

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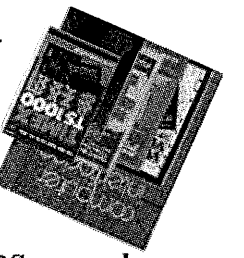

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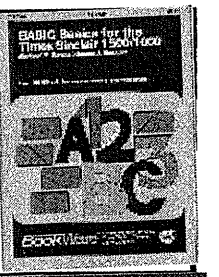

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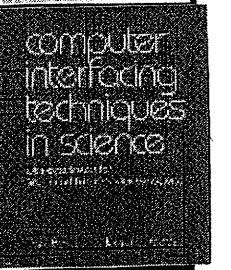

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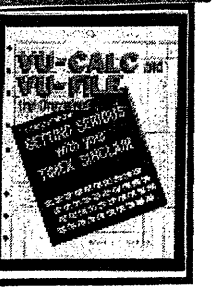

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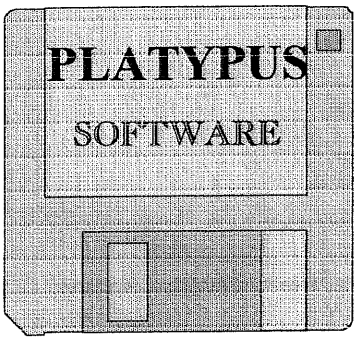

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2.) ZX printer and two rolls silver paper & documentation. three pounds shipping weight. will need a I amp power supply and if one is wanted can be supplied and weight will go up about one pound.

3.) TS-1000 with 64k memory internally installed mounted in a suntronics key board case. the computer has both a tv and monitor jack. no manual or powersupply or cables. zx81 manual9 powersupply and cables can be supplied but weight will 80 up a pound each for manual and powersupply.

4.) TI keyboard mounted in a wood case with a 15 pin connector that plugs into an interface board and also a forth rom TS-1000 computer. No TS-1000 or 2068 computer but does not work on a TS- 2068 for some reason. Great for checking a TS-1000 with a bad keyboard. The forth computer is switchable from TS-1000 mode to forth by way of the channel change switch on the bottom which means that you change the TV channels. The forth computer is out of the case. 4 pounds shipping weight.

5.) 2 teak 1/2 height 5.25" 40 track (400k) disk drives tested and working. Note: the ribbon cable connector is upside down to what other drives have their cable connectors. Shipping weight 7 pounds.

6.) TS-1000 computer board (out of case) on wood base with keyboard and mule legends and has TV/monitor jacks. No manual or power supply or cables but could be included if wanted. Five pounds shipping weight.

7.) TS-1000 computer complete in original box with all parts. Not known if working. Three pounds shipping weight.

8.) 5.25 full height 40 track (400k) disk drive in case with power supply. Eight pounds shipping weight.

9.) TS-1000 or 1500 computer carrying case. Three pounds shipping height.

10.) 10 TS-1000 computer boards out of case (foil wrapped and one file 60 keyboard overlay to put over the keyboard of a TS-1000. Four pounds shipping weight.

11.) TS-2040 connector like on the 2040 printer new never been used pass through board and shell. Eight ounces shipping weight.

12.) Memotech 16k RAMPACK version with switches to use with 16K rampack
for 32K of memory in orginal box and documentation. Not known if working. One pound shipping weight.

13.) Memotech 16K RAMPACK version with switches to use with 16K RAMPACK for 32K of memory with documentation. Not known if working. One pound shipping weight.

14.) assembled and tested Hunter board (for 8 to 16K memory area) with
one SRAM chip and documentation. Two pounds shipping weight.

15.) Disk drive case and power supply with two full height 5.25 40 track disk drives mounted inside. Ten pounds shipping weight.
16.) Disk drive case and power supply with one 5.25 40 track disk drive. Six pounds shipping weight.
17.) Unassembled kits for use on the TS-1000. Oliger expansion board kit; Oliger 64K memory board kit all parts; 2764 EPROM read kit. Also an MRP 64K memory board and dynamic RAM chips. All have docs. Three pounds shipping weight.
18.) Z-Dubber cassette load aid for the TS-1000. AAA battery holders corroded but new battery holders included. Partial kit for a Z-dubber included. One pound shipping weight.
19.) ZX81 16K RAMPAK tested and working! One pound shipping weight.
20.) 2 TS-1016 16K RAMPAKs tested and working. One pound each shipping weight.
21.) PC8300, TS-1000 almost clone computer. Uses TS-1016 RAMPAK and printer. No power supply or cords. Documentation in one manual in Chinese and one in English. has sound chip and different and better cassette SAVE and LOAD than TS-1000. TV display at bottom of memory so as screen changes the location of program changes so machine code is wild. Has both TV and monitor jack. Has joystick port but no docs. Works. Uses 12 volt DC at 1 amp power supply with center postive (caution a TS-2068 power supply is the reverse of that and will zap the computer.) Four pounds shipping weight.
22.) 2 TS-1016 RAMPAKs have the key missing on the connector. May or may not be working. I did have one working on the PC8300. One pound shipping weight.

Donald S. Lambert
1301 KIBLINGER PL
AUBURN IN 46706-3010.

TS-2068 books

1 Technical Manual - Time Designs Magazine
1 The Timex Sinclair 2068 Explored - (Tim Hartnell)
1 T/S 2068 Basics And Beyond - (Sharon Z. Aker)
2 User Manuals - T/S 2068 Personal Color Computer
1 Beginner/Intermediate Guide (Fred Blechman)
1 Intermediate/Advanced Guide (Jeff Mazur)
1 Pro/File 2068 (Thomas B. Woods)

TS-1000 & ZX-81 books

3 User Manuals (1000)
1 T/S 1000/ZX81 User's Handbook (T. Terrell & R. Simpson)
1 ZX81 Basic Book (Robin Norman)
1 1000/ZX81 Basic Book (Robin Norman)
1 ZX81 BASIC Programming (Steven Vickers)
1 ZX81 Programming For Real Applications (Randle Hurley)
1 37 Timex 1000/Sinclair ZX81 Programs For Home, School, Office (Edard Page)
1 Brain Games (John Stephenson)
1 The Explorer's Guide - ZX81 & T/S 1000 (Mike Lord)
1 Mastering Machine Code - T/S 1500/1000 (Toni Baker)
8 QuarTerS - Spring/85 through Winter/86
1 (SQ) Syntax Quarterly Vol,2 #1
28 SUM August/84 thru July/86
2 Sync (Special issue) 1982?
6 Sync Vol.3 #3 through Vol.4 #2
12 Syncware News Vol.2 #1 through Vol.3 #6
1 " " " (Catalog) Vol.1 June/83 thru June/84
6 Syntax Vol.3 #3 and Vol.5 #7 thru #11
17 Time Designs Vol.#3, #6, Vol.2 #1, #5, #6 Vol.3 #1 Through Vol.4 #6
8 Timex Sinclair User Vol.1 #1 through #7
21 T-S Horizons Issue #1 through #21
28 UPDATE Jan.88 through Oct.94

Hardware

1 TS-2968 computer - Never been used.
1 Amdek (# AMDISK III) dual disk drive.
1 Used TS-2040 printer with 3 extra rolls of paper.
1 Used Zebra FDD disk drive. Good for spare parts.
1 Westridge TS-2050 modem, rarely used.
1 ProScan FX-200, never used.

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QL Computer, new, never used. Package includes: Trump Card (768K), P/Supply, manuals, extra motherboard (if wanted), printer cable and 24 Micro-Drive cartridges (10 preprogrammed and 14 blank) $125.
WANTED: PC Magazine, Vol. 3, No.. 23 (Nov. 27, 1984) and/or Vol. 6 No.19 (Nov., 1987). Also "Printers" issue between 1990 - 1993.

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⇒- 2500 line English documentation, frequently-asked-questions file, PostScript file of doc, keyboard help screen, utilities to convert Spectrum screens to -.GIF and .PCX files, convert snapshot files and tape files from 5 other Spectrum emulators to own format and W to read DISCiPLE and +D disks.

⇒- Z80 processor amulabon including R register, inofficial instructions, inofficial flags,

⇒- Runs okay under DOS, Windows and DesqView,

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QL Today

What is it?

Like QL World and IQLR before. QL Today is a general magazine for everybody who has a QL or compatible. It Will contain listings of events, news, reviews of hardware and software, meeting reports, articles on programming, explanations of computing mysteries, histories of QL alumni. We are attempting to carry on from where IQLR left off but will improve things in the process.

Who is doing it?

QL Today is being published by Jochen Merz Software. Jochen Merz has been supplying software for the QL for several years and has built up a good reputation for quality and fair trading. The representative in Britain is Miracle Systems Ltd. who take subscriptions and do the distribution. The articles in the magazine are written by a number of prominent QLers and the editor is Dilwyn Jones.

Subscriptions:

Germany (+German add-on)	DM 70	
England	DM 60	£25
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John McMichael (Developer - Graphics)
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LARAMIE WY 82070

Bill Russell (QL)
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Http://members.tripod.com/~FWDcomputing/index.html

THE V4 ROM

Frank Davis of FWD Computing is now able to install internal RAM and the V4 ROM. Details of his service can be found in his price list.
email: fwdavis@iquest.net
The V4 ROM contains the following fixes:

Lost handles

In v3, handles could be lost by preempting the Filer during a a catalogue, resulting in a 'File in use' error which required a soft reset to clear.

ROM cards

It is no longer possible to insert and remove cards while the Z88 is switched off, which could cause confusion, since the Z88 now wakes up when the flap is opened.

PrinterEd

When updating the PrinterEd settings under v3, it is common to encounter a 'FAIL' condition. This has been fixed with v4. In addition, the "Allow line feeds' option now works correctly.

RAM.-device

The system no longer gets confused if files are present in this useful device when the Z88 is reset.

Expanded machine

The Z88 will now behave as an expanded machine (giving a full map in PipeDream, and 40K workspace in BASIC) if there is 128K RAM anywhere in the system, and not just in slot 1 as with v3.

Filer display

In v3, a problem sometimes occurs with Filer when marking a file after scrolling the cursor. This causes the first letter of the filename to disappear, but is fixed with v4.

They also buy old & even non-working Z88s, accessories, software and books for refurbishment.

FWD Computing Ad for the

HOLIDAYS

Prices good thru January 25, 1998

V4 ROM & Internal RAM upgrades For the Z88

I am now selling the Version 4 ROM, and the price for it is $35 if you wish to install it yourself, and $50 if sent to me to install (add $15 for outside of North America for postage if I install it.)

The V4 ROM will not be of use to someone unless they have upgraded internal Z88 memory to at least 128K, as it was not designed for 32K internal RAM. External RAM will not work as well with this. I can do the RAM addition for those who want it. The price for me to install 128K internal RAM is $35, and to install 512K internal RAM is $55. This includes postage in North America, for elsewhere add $15 for the extra postage.

When sending these to me it helps to let me know ahead of time and to plan on the time needed to fit the work into my schedule (I still work a regular job for the Federal government for a short time longer) and I should have them back on the way to the customer by 4 - 7 days after I get them.

All prices include shipping in North America, add $5 per order for elsewhere. All prices listed are for US$, for all others add 10% for currency exchange; for first time orders please allow time for check clearance. We accept personal checks, company checks, cash bank drafts and will ship C.O.D. (COD charge is extra on the shipping)

All payment should be made out to 'Frank Davis'.

Z88 EPROM cartridges

made by Cambridge

SPECIAL FOR THE HOLIDAYS! 32K Cartridges are $11 each or 3 for $30.

Other items

Z88 to MAC Cables for $8

SPECIAL! Z88 Serial Printer Cables are $8

SPECIAL! Z88 Serial to Parallel Converter Interfaces are $34

SPECIAL! Z88 vinyl carrying cases are $6

Toppers to protect the Z88 screen from damage are $22

SPECIAL! QLINK for Z88 to QL Computer w/extras for $12
MACLINK for MAC to Z88, or PCLINK for PC to Z88 are $26 each or both for $50

AMIGALINK for Z88 to Z88 Computer for $25
(all of the LINK setups except the QL contain cable, cartridge and disks)

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TEXT87 Word processor for the QL, only a few left. Presently the best word processor , with many fonts, good printer support, columns, etc. There are other support programs available to use with this program. **Sale priced at only $55 for the Holiday Season only.**

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SPECIAL NOTICE

Around the first weekend of May 1998 we are planning to hold a QL/Sinclair get together in the State of Pennsylvania. This is following in the tradition of the QL shows first started by IQLR, but were last year opened up also for Z88. This year we want to include all Sinclair users. Contact us for more info. Send a SASE for more info as it becomes available. FWD